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California Cultivator

LOS ANGELES SAN FRANCISCO

JANUARY 5, 1906

CALIFORNIA FORESTS

California has over 28,000,000 acres, or over one-fifth of its total area, under forest cover. Much of this land is finely timbered, and, with forest management, will be increasingly valuable for the wood which it can supply. But in California the forests have another use, which, as is well understood in this State, is even more important than the production of timber, to conserve the water supply. The wonderful agricultural development which irrigation has made possible is perhaps the largest fact in California's recent economical history. Because of the need of water and the fear of floods public sentiment in favor of forest protection has always been well in advance of that in other States.

The Two Best Spray Nozzles

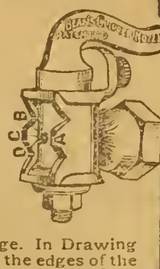
The Bean Cyclone Long Distance Spray Nozzles

ARE EASILY CLEANED by simply jabbing against a limb which throws the cap back onto a steel needle. The pressure instantly returns the cap to position.

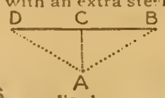
MAKE A BEAUTIFUL SPRAY with **great penetrating force** because there is no abrupt bend in the nozzle to retard it.

ARE LIGHTEST on the end of the rod; **SIMPLEST** and **MOST DURABLE** because one cap will last as long as 5 or 6 of the ordinary kind.

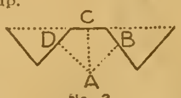
HAVE NO SPRINGS or cumbersome parts to catch in the limbs. Packed one in a box with an extra steel cap.



Bean Clipper Nozzles



No. 1



No. 2

throw a broad, fan shaped spray with practically no waste or drippage. In Drawing No. 1 notice it is nearly twice as far from the discharge hole A to the edges of the nozzles at B and D as from A to C. This adds so much friction to the outside edges of the spray that they fall short and **are wasted.**

In Drawing No. 2 it is an equal distance from the discharge hole A to all of the points B, C and D. Hence all are treated alike and a **perfect spray results.**

BEAN CLIPPER and BEAN CYCLONE NOZZLES can be secured of your hardware dealer or will be sent postpaid on receipt of $1.00. We also manufacture Vermorel and Side Cyclone Nozzles. Catalogue No. 16 describing Hand Pumps or No. 18 describing Power Sprayers sent free upon request

BEAN SPRAY PUMP CO., 161 West Santa Clara Street, San Jose, Cal.

Winner New York, 1904, score 97½. Used as a model in the American Standard of Perfection.

Farm at Clearwater on Santa Ana Electric Line

W. W. HOWARD'S

S.C. WHITE LEGHORNS

Best Strain, Best Birds.
Greatest Layers. Largest Eggs.

WIN THE BLUE AT THE ST. LOUIS WORLD'S FAIR.

FIRST PRIZE HENS, St. Louis World's Fair; also at Madison Square Garden, New York's Great Show, 1905.

All specials and medals—best hen, best head. pure color.

FIRST PRIZE COCK At Madison Square, New York, 1905, and beating St. Louis World's Fair and Boston winners.

FIRST PRIZE PULLET at Madison Square Garden, New York, 1905, as well as one of the best cockerels in the U. S.; were sired by our famous Rob Roy Jr.

Our patrons report grand success with pullets from our stock; 26 eggs per month, 56 eggs in 64 days, 18 eggs in 19 days; eggs that weigh 2½ to 3 ounces.

229 eggs already this season.

Improve your flock with one of our large, beautiful White Cockerels.

Birds and eggs for setting. Price list mailed on application.

THE W. W. HOWARD CO.

(State Vice-President National S. C. White Leghorn Club)

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YOUR FORTUNE

BEGIN IT WITH THE NEW YEAR

The old year is about past—figure up what you have earned last year. How much has each hen earned for you on an average? Say you have 2,000 hens, a small flock—and you have earned $2,500 from them during the year. You still have 2,000 hens—are you going to be contented to go through another year and not make any more money than you did the past year?

Wake Up! Think! Get an Ambition!

Two thousand laying hens next year can be made to earn for you

$5,000.00.

Is it worth striving for? Would you appreciate it if some one would put you wise and tell you how?

"Where there's a will there's a way." The man who has a flock of 6,000 laying hens should earn this coming year

$15,000.00.

SEE HERE! You can get Mr. A. R. Coulson to prepare for you a solution to be combined in the mixture called Coulson's Egg Food—a feed of the choicest and richest kind, and you can feed this to the laying hens every day for one year, and also all the wheat and other grain to go with it, also including all extras; and all it will cost you on an average to feed the hens for one year, will be $1.25. You can feed them for 90c if you want, but this $1.25 worth of feed per hen coupled with good care, will make the hens average 180 eggs per hen. We are talking about the whole flock now—individual hens may produce 300 eggs.

Taking the average price of 27c per dozen, last year's average at Petaluma, 180 eggs would be worth $4.05, deducting the $1.25, leaves $2.80 per hen profit.

We do, others are doing it, YOU can do it.

Strengthen and develop the egg organs of the hen and make her a wonderful layer.

Correspondence solicited.

Stories From Life

The Poor Sucker Hadn't Any Brains

A minister (?) was telling the congregation about a fellow that went fishing. He said the man, in order to catch the fish, put whiskey on the bait, and lo! all the fish bit, but one, and the man thought that must be an awful wise fish that didn't bite. The fisherman was more anxious than ever to get the othre fish, to see what was wrong with it, and he finally ensnared it. Then he examined, and found that **THE POOR SUCKER DIDN'T HAVE ANY BRAINS.** No wonder he didn't bite!

Pick Up the New Ways

It's a good thing that people don't live to be too old, for some people are apt to get set in their ways, and want to do now just as things were done fifty years ago. They forget that the world is continually advancing, and if you don't pick up new ideas and new methods, you are sliding backwards, for you can't stay still—it's either forwards or backwards. Which way are you going?

Three Kinds of Fools

The ring master told the clown he was a fool. The clown replied there were three kinds of fools. He was one for money. Then there is one fool to be pitied, the one who was not bright, naturally. But the greatest fool is the man who knew it all, and every one holds that man in contempt.

Ignorance Keeps Back Progress

Fulton went to Napoleon and told him about his invention of a steamship, to take his many men across the water, instead of the long, disastrous journey by land. Napoleon thought itimpossible for ships to go without sails, so he wouldn't make use of Fulton's proposition. If Napoleon had only listened to Fulton, he might have conquered all Europe, and the world's history today would have been different.

Intelligence Recognizes and Takes the Opportunity—Makes Wealth and Prosperity

When Bessemer talked to a committee of English Iron Manufacturers, he tried to persuade them that he had an improved method of making steel. They listened to him a while, and then said, "Oh, pshaw! it's all nonsense; we are making steel good enough as it is." So they turned down Bessemer's proposition. But Bessemer, afterwards, got other men interested, and made millions of dollars The English Iron Makers might all have been millionaires, if they had taken up Bessemer's proposition; but as they didn't, they died comparatively poor men.

* * * * * * * * * * * * *

To climb up the ladder of success, one should take advantage of **EVERY** opportunity.

Don't Be Too Suspicious

"You can't fool me," says the man who THINKS HIMSELF WISER than others. The worst thing about the suspicious man is that he prides himself on the very qualities most FATAL TO HIS SUCCESS IN LIFE.

Many human beings unfortunately, are born with a suspicious nature. There are thousands of men making failures of their lives, who could make great successes, if they could only get rid of their suspicious natures.

Don't try to hog it all—give some one else a chance to make a little and you will prosper ten times better. Remember, that it is only IGNORANCE that KEEPS BACK PROGRESS—it takes intelligence to recognize the golden opportunities.

Wake Up—Do Something

"If I should buy everything that came along, I'd be broke," that's the greatest mistake of all. In trying to keep from buying these things, nine times out of ten, you keep away **OPPORTUNITY.** Believe every man a friend, until he proves himself otherwise.

Don't Try to Get Along Without It

Life is too short—what's the use to deny yourself things which you might and should have.

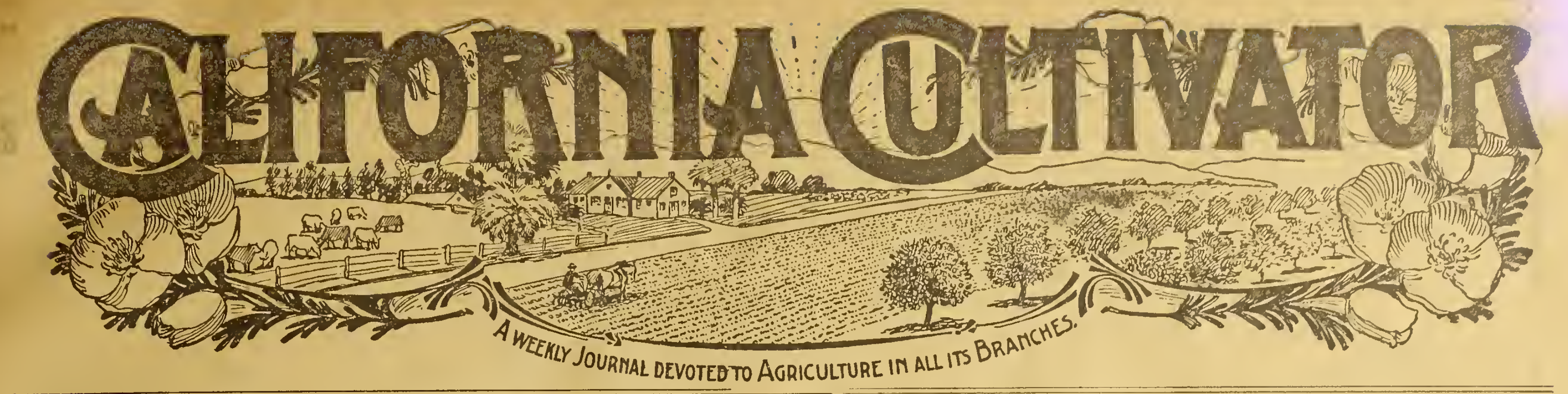
There is no doubt but what you can get along without Coulson's Foods, but that would be SELF DENIAL, and it would be a FOOLISH SELF DENIAL; for you can just as well have Coulson's as not. It will not cost you any more to feed Coulson's than what you are feeding now, and think of the great convenience it is to have the feed already mixed for you, so as to save you all the bother of mixing.

You will feel better, be **MORE PROSPEROUS** and **MORE PROGRESSIVE**, if you have it. Then get it. It takes a real genius to say "yes."

What Do You Say?

Coulson Poultry and Stock Food Co.

Petaluma, California



CALIFORNIA CULTIVATOR

A WEEKLY JOURNAL DEVOTED TO AGRICULTURE IN ALL ITS BRANCHES.

Vol. XXVI—No. 1 LOS ANGELES, CAL., FRIDAY, JANUARY 5, 1906 Subscription $1 a Year

Breeding the General Purpose Horse

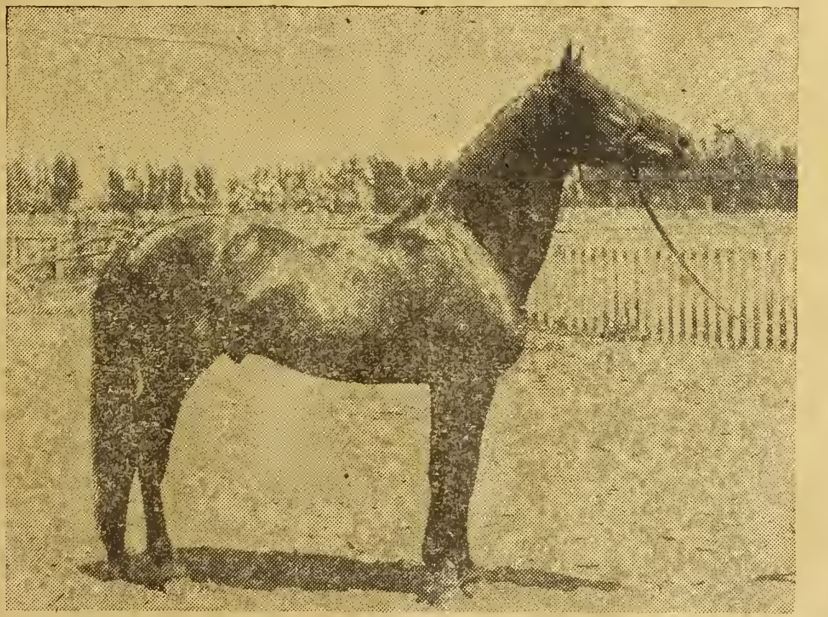
By W. A. Bates, Diuuba, Cal.

"As to the breeding and marketing of an army horse, I am going to assume in the first instance that there is an animal designated as the horse, and second, that there are several different breeds of horses; but among all of the breeds, whether on this or on other continents, there is but one thoroughbred horse. Since the invention of gun-powder there has been and is now a demand for a different type of horse than that usually found. The thoroughbred horse will not and cannot fill the requirements, his general contour, size and disposition are not in harmony with the requirements that are to be sought for and are necessarily to be found in the army horse; on the other hand, none of the coarser breeds used for draft purposes are suitable on account of their locomotion and inability to fill the requirements, their greatest hindrance being in their size, being adapted only for slow purposes, or in moving bodies slowly from place to place.

"Some means must be devised or that particular method found by which the horse, as I understand him to be, that is, one for general utility—one that can fill all offices required of him, whether it be for draft purposes, for driving purposes or for speed, and the happy combination of these three varieties, in my estimation, will generate a breed of horses suitable for the army, and in fact, the most suitable horse that can be developed for such purposes."

* * *

Haphazard Breeding.—"History recites the lamentable fact that the would-be aristocracy of England as well as America, being over-desirous to imitate the land-lords and royalty of their own country and the aristocracy of this country, and being over-zealous in making pretentions to that circle in society to which they cannot well aspire, became too reckless in the production or in the attempt to produce a horse suitable for the chase or a hunter, as he is most generally called, and bred for them in a haphazard manner, and it is to be regretted that the breeding of these half-breed horses is too often neglected or conducted on principles when on second thought the most crude farmer may see his folly. The trouble then, as now, with men in the breeding for desirable horses, simply undertook to breed for a colt because they have a dam that is aged or has been injured accidentally, or is unfitted for any longer active work or service, and nine chances out of ten by such haphazard breeding, there is a progeny that is not fitted for any purpose, bearing the blemishes of the broken-down mother, whether over-aged, or injured or deformed; again, on the other hand, there is another and more serious objection to the manner in the specific class of horses, and that is: Throughout our own country—with which I propose at present to speak most directly, all country places, we know of our own observation, are periodically visited by travelling stallions, many of which are absolutely worthless, and the average farmer paying no regard to the elements that go to make up a good horse, will overlook his rough head, his disproportioned limbs, curbed hocks, ring bones, spavins, or any other deformity, whether natural or acquired, and if there is any truth in the universal rule that "like begets like," certainly the fruits of this haphazard breeding is bound to be reproduced and will show most prominently in the districts that are periodically visited by journeying horse breeders."



The above cut represents Limonera, a California horse owned by J. H. Williams, of Los Angeles, with a record of 2:15¾. This horse represents the best strains of the American trotter. He combines the best blood of both Piedmont and Lulaneer, and is especially adapted to the road, as a driver, or to the saddle. In this respect he is what is known among fashionable horsemen as the dual purpose horse.

* * *

The Thoroughbred.—"Now compare this method which I have roughly sketched, to that of the man who produces the only perfect horse in the world, namely, the thoroughbred. To begin with, the breeder of thoroughbreds does not look to the dam or sire alone, but to each individually and separately. The choice of the mother is of great moment in this, that she should be free from all constitutional ailments or inabilities, such as roaring, imperfect sight or weak lungs. My actual experience, in so far as pertains the production of the horse fit for cavalry purposes, or an army horse as it is termed, for the Pacific Coast States, is one that is a near approach to the English half-breed hunter. Owing to the rough, broken surface of the Pacific Coast States and long distances from one watering place to another throughout Southern California, Arizona, New Mexico, Colorado, etc., and in fact throughout all States west of the Mississippi River—the horse best fitted is the horse generally denominated a mongrel, owing to peculiar crosses on his dam's side and the thoroughbred strain on the part of the sire. In the boundless regions of Arizona and Colorado the horses in their wild state are usually degenerates, and owing to inbreeding, have naturally decreased in size. The dams from this inferior class of wild horse grafted onto a half-breed Norman produce an animal of decidedly queer make-up, a particularly bad feature being, the head is disproportional to the body. Taking the dams of this latter and crossing them onto a thoroughbred sire produces a horse that has endurance, and, in my estimation, is most suitable for all around cavalry horse, having the ability to carry a man of from one hundred and seventy-five to one hundred and eighty pounds with convenience; having stamina and ambition to travel long distances; having a well proportioned barrel capable of carrying a meal fully six hours without rest. This horse will measure from fifteen and one-half to sixteen hands high, weigh from eleven hundred to twelve hundred and fifty pounds, his feet in porportion to the body and short couplings, broad loins and a happy blending of the shoulders between the thoroughbred and the draft horse. If necessary, they can be taken from the saddle and put in harness and are large and strong enough to pull a good load, and will outdo a Norman horse, particularly in rough, broken countries; again, if necessary, they may be harnessed to rigs for medium or quick transportation, and have the sense and docility of the thoroughbred."

"The raising and preparation of the last above described horse should, I think, follow an entirely different line to that of the draft horse or race horse, except in this: that it should be tamed so as to overcome any fear in infancy of his preceptor; at the age of two years handled, at three years he should be ridden, and at four years he should be ready to do service other than the military or army drill that he must necessarily take to properly fit him for cavalry purposes. I believe, furthermore, that horses for cavalry purposes should not be reared in low or swampy grounds, but on the prairies and in the hills or mountainous districts, where by nature the best hoofs are grown. If in the mountainous districts, they are as well or better off than on the prairies, there every muscle and limb and joint is brought into a natural and active service. Scampering over the hills preserves perfect lungs and develops them to their fullest extent.

The greatest care, however, is in laying the foundation for the horse desired to be produced. Great care should be had in the selection of the dam and sire—to note that each are free from any natural blemishes or imperfections—and then the old adage that like produces like" is not only to be hoped for or expected, but is to be and will be realized.

"Marketing the horse is a secondary consideration; produce the article and the market will hunt you."

* * *

The general-purpose driving horse ought to be bred along the lines indicated in the breeding of the army horse. He should have strength without too great weight, reasonable speed without being fast, and so thoroughly tamed as to make him safe under all circumstances.—Editor.

101233

BY J. W. MILLS, POMONA, CAL.

PICKLING OLIVES.

Editor Cultivator: Will you please tell through your paper, how to pickle ripe olives. Where can I get a book which tells how to do it, and which does not cost very much.—Subscriber.

The olives should be graded for size and ripeness, different varieties being kept separate. When ripe and partly ripe olives are mixed during the curing process, part will finish before the others, even though they are of even size.

The olives should be covered with a potash solution of lye, made in the proportion of one pound to seven gallons of water. The pickling vessel should be so arranged that the liquid may be drawn off from the bottom. The reason for this is that the lye settles and becomes more concentrated at the bottom, and should be drawn off and poured over the fruit at least once a day. Lye should not be used longer than three days. After this length of time has elapsed the lye seems to have no effect on the olives. The lye should be boiled and skimmed before using and poured over the fruit hot. This acts as a disinfectant. Should the olives show a tendency to get soft, add about a third of a pound of salt to a gallon of lye. This will have a tendency to harden the olives. The great difficulty in pickling the olive, is to prevent them from spoiling or becoming tainted. Heat is the best disinfectant, as it purifies without leaving any bad effects.

There is no prescribed length of time for leaving the olives in the lye, as even the same varieties will require different lengths of time to cure, depending on the condition of the olive and even the weather at the time of picking. The only certain way to determine when to stop the lye and use fresh water is to cut the olive clear to the pit and observe to what extent the lye has penetrated. The lye should be stopped just before it penetrates to the pit. By the time the water, during the process of rinsing, begins to take effect, the lye has gone clear to the center. By cutting a few olives a day, the time at which to commence washing may be very closely determined.

The water should be changed at least twice a day while extracting the lye, oftener is better. If the vessels can be so arranged, it is best to let the fresh water flow in at the top as fast as that is drawn off at the bottom. It has been our experience that exposure to the air has a tendency to bring about some sort of infection which starts the cured fruit to "go wrong." If a weak boiling brine is poured over the fruit about every other day instead of clear water during the curing process, it will make the fruit keep better. Bear in mind that pickled olives can only spoil by becoming infected with some bacteria or fungus germs. If these are headed off during the curing process, and kept out afterwards, the fruit will keep indefinitely. Hot water is the best disinfectant, but it has a tendency to soften the fruit. This can be conteracted by the use of salt either in the lye or rinsing water.

After the lye has been extracted by the clear water process, the fruit should then be pickled in brine. The stage at which the lye is all extracted may be best determined by the color of the water which goes off in the rinsing process. The water that contains lye will be dark in color and frothy. At the latter part of the washing period, tasting olives of different sizes will determine the point at which the lye is extracted to a nicety.

The first brine should contain about six ounces of salt to the gallon. Allow it to stand two or three days, draw it off and put on a brine containing 14 ounces of salt to the gallon. Allow this to stand till ready to pack the olives for storing, when the brine may be made up to a pound or more of salt per gallon. The light brine is used first to prevent shriveling the fruit, which it will do if put into strong brine when first taken out of the fresh water. Put all of the brines on the fruit while they are boiling hot, and especially the last brine.

The olives must be kept covered with a cloth and shaded during the curing process. Glazed crocks or parafined wooden vessels must be used.

The Agricultural Department of the State University issues pamphlets which treat on such subjects. These will be mailed to you upon application. The columns of this paper will give desired information on any subject in your line that is fresh down to date.

PRUNING THE OLIVE TREE

Editor Cultivator:—What is the proper method of pruning olive trees? My trees are only six years old and have topped them off several times and yet they are twenty feet high. Where can I procure pamphlets on the subject and how am I to procure the same. R. D. W., Exeter.

Your trees seem to be somewhat more vigorous than most olive trees and they will insist on having their own way till they get over their rampant growth. It is fortunate that you have such vigorous trees as it means big crops at some future time. Large trees mean large crops.

Your trees should be pruned so as to give them heavy, stocky branches as only such branches will hold up heavy crops without breaking or being propped. This is done by commencing when the tree is two or three years old and cutting to a small lateral that comes out of a branch that is considerable larger. This prevents the tree from sending out a bushy top if the cuts are made to outside laterals, the tops of the trees will be gradually spread and prevent crowding. The bearing period will come when the trees get over their rank growth. It is impossible to prune the olive so that it will not lose a small branch now and then, no matter how stocky it is trained, but such broken branches do not cut any figuse as they do not destroy the symmetry of the tree. Olive trees fruit as peach trees do and in order to secure moderate annual crops, they must be pruned on the same plan as peach trees.

MANZANILLO OLIVE.

Editor Cultivator:—I would like to know if the Manzanillo olive is a self fertilizer. Mrs. L. A. H.

Manzanillo is a self fertilizer but like all olives, has its "off" years when it will be full of bloom and set very little fruit. It is better to plant two varieties as they have beneficial effect upon each other. We would recommend planting Mission with your Manzanillo. If we were contemplating olives we would plant Mission and Santa Catarina. The latter will make an early pickle of fine quality, though it is not dark in color. There are dark olives which ripen early but they are very apt to be diseased at the pit and do not keep well.

The Johnson & Musser Co.
Los Angeles, Cal.
SEED CATALOGUE Now ready. Write for it.

THE VERNON NURSERY
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Deciduous Fruit Trees, Grapes, Walnuts, Figs. Peaches, Apricots, Plums, etc.
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TREES!
80,000 Apple Trees in 42 Varieties. Extra well rooted. Clean. Grafted on whole roots and free from all pests. Also an extra fine stock of Prunes, Pears, Plums and Walnuts. Write for price list. **A. F. Scheidecker,** Proprietor Pleasant View Nursery, **Sepastopol, Cal.**

If You Knew You Could Double Your Crop and Enhance Its Quality by Securing Plump, Fertile and Sure-Growing Seed, You would Do It Immediately.

If you will favor us with an order for any of the following sure-growing vegetable seeds, which we are offering at prices within the reach of all, your hope will be realized:

ONIONS—Prize-Taker. Pkt, 5c; oz. 10c; 1-4 lb, 40; lb, $1.35.
LETTUCE—Curled Simpson. Pkt, 5c; oz. 10c; 1-4 lb, 25c; lb, 75c.
CABBAGE—Extra Early Eureka. Pkt, 5c; oz, 10c; 1-4 lb, 35c; lb, $1.25.
BEETS—Improved Blood Red. Pkt, 5c; oz, 10c; 1-4 lb, 20c; lb, 50c.
CARROTS—Ox Heart. Pkt, 5c; oz, 10c; 1-4 lb, 20c; lb, 50.

If you plant these seeds you will get results in bounteous crops which will prove a pleasure and a profit.

F. Gilman Taylor Seed Co.
BOX 14, GLENDALE, CAL.

Armstrong Nurseries
The Sign of Quality
Is in evidence in all the nursery stock graphically described in our new catalog, which tells of the best varieties of Fruit Trees, Grape Vines, Field-Grown Roses, Shrubs and Plants. Avoid the middleman and dealer; buy direct from the producer. A copy of this booklet will be sent to you for a two-cent stamp.
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THE CROCKER BARTLETT PEAR
Is out of sight compared with other pears.
GOLDEN RULE NURSERY - LOOMIS, CAL.

GEO. B. WARNER'S
Orange County Nurseries
Choice line of Orange Trees, consisting of Valencia Late, Wash. Navel, Navelencia, King Tangerine. Eureka Lemon, Budded Loquat, Blue Gums, Red and Sugar Gums, large stock Soft Shell Walnut trees 3 years old, Grafted Walnuts, Palms, Shrubbery, and general line of deciduous fruit trees. Write for price list.
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WRITE THE
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BEFORE PLACING YOUR ORDERS FOR
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Large Stock of Muscats, Thompson Seedless, Malaga, Emperor, Cornichon, Tokay, Lenoir, Black Morocco, and Wine Varieties.
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The largest and healthiest stock of all kinds of Deciduous Fruit Trees in Southern California, from the famous Oregon Nursery Co. Nothing equal in size or healthy growth, with unsurpassed wealth of roots. Many thousands Soft Shell Santa Barbara Walnuts grown by us and guaranteed to be of superior quality—(see sample nuts at the office). Citrus trees of all kinds and varieties. Ornamental Trees, Palms, and everything in the tree line desired for Spring planting. Call on
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APPLES—Finest you ever saw.
GRAPES—Good assortment absolutely free from disease.
WALNUTS—Choice stock.
WASHINGTONIA ROBUSTA PALMS—Lots of them.
Wholesale and retail. Complete line of trees and plants. Write for price list.

THE ANAHEIM EVERGREEN NURSERIES
Tim Carroll, Prop.
Anaheim, Orange County, California
The Oldest Nursery in Southern California
Established 1868 by the Present Owner.
Palms, Pines, Acacias, Cypress, Camphors, Eucalyptus, Guavas, Budded Loquats and all kinds of Ornamental Trees. Be sure and visit the Nurseries. A cordial invitation to all. Nurseries, 200 yards west of Loara Station, S. P. R. R. Our fine Illustrated Catalogue free. Write for it.

RECLAMATION OF THE IMPERIAL VALLEY.

One of the most striking features in the opening of a farm by irrigation is the rapidity with which the land takes on the appearance of long occupancy once the water is applied. There is little of the long wait that attended the settlement of the timbered lands of the Mississippi valley, few of the early day privations and hardships that marked the opening of a farm in those sections. The delay comes in the constructing of the main canal, and once that is accomplished the farms are made. For the owner to plow and seed every acre in the first year of cultivation is not exceptional. By the second or third year the tree growth has come to destroy the level stretch and bleak appearance and so obliterate the last reminder of the desert.

The story of opening one irrigated section reads much like that of another and while the following account is largely confined to the experience in the Imperial valley in California, it will serve almost as an account of similar enterprise in any of the irrigated sections of this state.

The history of arid America relates many interesting tales of the creation of vast deserts back in ancient geologic times, but none more impressive than the story of the great Colorado desert in extreme southwestern California, the desert which has become famous as the death bed of so many venturesome fortune hunters.

The Colorado desert is distinctive. Of all the deserts of the West it alone lies beneath the level of the sea; it alone was builded by a river.

From the beginning of time the Colorado river, a snow-fed stream rising on the west slope of the Rocky Mountains, has been rushing madly toward the sea, discharging an immense volume of water into the Gulf of California. It does not traverse broad fields and fertile valleys, but throughout its entire course has cut its tortuous way down monutain gorges, until it finally reached the gulf.

The Colorado has been an effective tool in the hand of that great artist, Nature. Through countless ages it has been carving out canyons which for scenic grandeur have no equal in the entire world. But the carving of these canyons has meant the tearing away of millions upon millions of tons of solid rock. The process of erosion is slow, and the rock has been removed in minute particles, but these particles, mingled with the sediment brought down to the river by the melting snows and mountain streams, have given the Colorado its reputation as a muddy river, for it carries more silt than any river in the United States save the Missouri.

Like all silt-bearing streams the Colorado has built a delta at its mouth, a delta more expansive and more unique than that of any other river in the world. It was this delta that eventually created the great Colorado desert.

Back in prehistoric times, instead of heading seventy miles south of the International boundary line, the Gulf of California extended more than 100 miles northward into what is now California. It was walled in on either side by high mountain ranges. The Colorado river entered the gulf from the east, at a point near the present international boundary. There it deposited its silt and solid matter, and soon began the building of a delta. The delta steadily pushed westward and southward until, after years innumerable, it reached across the gulf, to the foot of the range on the west. In seasons of low water the delta formed an effective dam, shutting off the northern extremity of the gulf from the gulf proper, creating what became in fact a small inland sea, 100 miles in length and fifty miles across at its widest point.

Under the scorching rays of the sun the waters of the inland sea rapidly evaporated, until the sea became perfectly dry, leaving an enormous sink at one point 287 feet below the original level of the gulf.

Each summer, with recurring high water in the Colorado, there would be an overflow into this inland sea; river water would rush in, carrying in sediment with it. As the floods receded the water in the sink again dried up, leaving behind a thick deposit of silt on the bed of the former gulf. This process of inundation continued, probably for centuries, the river each year overflowing into the sink, each year adding new soil to what it had deposited the year before. Never, however, was there sufficient overflow to restore the inland sea; only enough to cover the valley slightly, and for a short time, for with each successive dry season the flood waters were carried off by evaporation, or sank into the soil.

The overflow into the Colorado desert, as the old sea bed became known, continued for centuries, until there was a thick deposit of rich silt covering practically the entire sink, the Imperial valley, as it is known today. But as the deposits were made in the Imperial valley they were also made close to the river channel, and today, except in seasons of extreme high water, there is no longer an overflow into the Imperial valley; the river is unable to climb its banks.

Today the Colorado river, that created the Colorado desert, or the Imperial valley, is being utilized in its reclamation. The waters which once freely flowed from the Colorado at certain seasons over into the Imperial country, now have to be diverted onto that vast tract. Fortunately, however, in times of frequent overflow, the waters of the Colorado cut three channels down into the Imperial valley, running toward the Salton sink, and these old channels have recently been connected with the river by artificial canals, and have once more been brought into use as conveyors of water. Five hundred thousands acres of land in the Imperial valley in California, and half as much adjoining land across the international boundary, have been laid off, and are being furnished with water from the Colorado river. Most of this land is below sea level. The reclamation of the entire area has been undertaken by private capital, and is being pushed to a successful conclusion.—Irrigation.

TOOLS

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eliminates *all* uncertainty in tool buying.
As this brand covers a complete line of tools, all you need remember in buying a tool of any kind is the one name Keen Kutter.
Keen Kutter Tools are without reserve or qualification the best tools that money, brains and skill can produce. No matter how much you pay, no matter who you may have thought to be the best maker of a particular kind of tool, you cannot get any tool, anywhere, better than those sold under the name of Keen Kutter.
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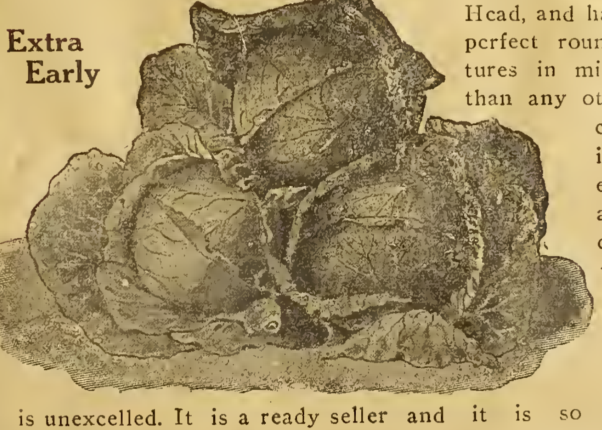

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Lilly's Glory Cabbage

We perfected this variety on our own experimental grounds, and it has proven a wonderful success, pronounced without a doubt the best cabbage for this coast. It is as hard as the Danish Ball Head, and has an even more perfect roundness. It matures in mid-season, earlier than any other hard, round cabbage. In quality it proves most excellent, tender and crisp. This cabbage is destined to be the most popular variety on the coast. For market purposes it is unexcelled. It is a ready seller and it is so good that a profitable trade can be built up for it. We advise all our customers to try this cabbage. Sold only in sealed packages. Price, pkt, 10c oz., 35c; lb., $3.50.

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Enclosed is $..............in (money order, draft, 2c stamps) for which please send me
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CHAS. H. LILLY CO. Portland
Seattle
San Francisco

UNCLE SAM'S GREAT IRRIGATION WORKS.

Millions of acres of arid land in the West will be thrown open to the farmer through irrigation, and the huge projects which the government has on hand under the national reclamation act will, it is claimed by the most enthusiastic irrigation experts, open the way for the mightiest Anglo-Saxon civilization the world has ever known.

Under the reclamation act the government will construct the largest irrigation works in history, far excelling those of Egypt and India. The reclamation act provides that funds from the sale of certain public lands shall be applied by the government to the building of irrigation works. At the present time the fund amounts to about $28,000,000 and is increasing at the rate of $4,000,000 annually. This fund is self-continuing. After the irrigation works have been constructed the sum expended in any one work is to be returned to the government in ten equal annual installments by the settlers pro rata. At the end of the first year, after any one project has been completed, one-tenth of the original amount expended on that work is to be returned and put into other projects.

Among these great works undertaken by the government is the Shoshone project in Wyoming, which will irrigate 160,000 acres of public land; the Uncompahgre valley project in Colorado, 10,000 acres; the Belle Fourche project in South Dakota, 85,000 acres; the Salt river project in Arizona, 200,000 acres; the Malheur project in Oregon, 90,000 acres; the Hondo river project in New Mexico, 10,000; the Fort Buford project in Montana, 60,000 acres; the North Platte project in Wyoming and Nebraska, 300,000 acres; the Minidoka project in Idaho, 130,000 acres; the Yuma project in Arizona and California, 115,000 acres; the Truckee-Carson project in Nevada, 350,000 acres; the Klamath project in Oregon and California, 2,000,000 acres. Beside the projects enumerated, which total no less than 3,600,000 acres, the engineers of the reclamation service are preparing surveys on a great many other projects which will be undertaken as rapidly as the fund expands and is returned to begin work.

Fifty million acres of arid land, it is estimated, at present totally unfit for agriculture, will be opened to the settler through the huge irrigation works which the government will construct under the national reclamation act.—Hamilton Wright in National Magazine.

EUCALYPTUS, MALARIA AND MOSQUITOES.

The eucalyptus will not live in the winter anywhere where the temperature falls more than a few degrees below the freezing point. Malarial fevers are prevalent at times in marshy ground, and mosquitoes breed in marshy places. The eucalyptus, by reason of its rapid growth, absorbs so much water from the soil as to actually drain marshes of superfluous water and destroy the breeding pools of the mosquito. Any rapid growing tree would do the same service, though in a less degree than the eucalyptus, which is a more than commonly rapid grower, but the Carolina poplar would be a good substitute.

Like the hinge on a door—men's principles work but one way.

Citrus
Deciduous
Ornamental
TREES
Vines
Palms
Roses

And Every One True to Name

When you buy goods of any kind you of course find it to your interest to do business with an old established firm that has made a reputation for itself by selling dependable goods. Did you ever stop to think that a nursery that has been engaged in working along certain lines for a period of twenty-one years, and has developed a business extending throughout California, as well as into many other states and foreign countries is a safe institution for you to do business with? Growing trees is no difficult matter, but to have them true to name requires great care and a thorough knowledge of the business brought about by years of hard work and close application to business, backed by a pride to give our customers, old and new, square treatment, and never to make any misrepresentations.

Deciduous Fruit Trees

Are grown in new land in the great Kings River bottom where the soil is so deep and loose that our trees have not only made a magnificent top growth, but have a fine fiberous system of roots, which is in itself a great recommendation to any fruit grower.

Citrus Trees

If you want an assortment of varieties we can supply you with the leading kinds of Oranges, Lemons, Pomelos, Limes, Citrons, all grown in the great thermal belt near Exeter, Tulare County. Trees are well matured and stocky, with rich, dark green foliage, which is typical of the perfect citrus trees.

Grape Vines

On their own roots and grafted on Phylloxera Resistant roots. The largest stock and the most complete assortment on the Pacific Coast. Let us figure with you on your requirements. It will be worth your while.

Apples

All standard sorts, budded and grafted on whole roots. No piece roots used.

Pears

No blight in our stock. If you want the best come to us.

Cherries

We have a complete line of all the standard varieties, but the bulk of our trees consists of Royal Ann, Bing, and Black Tartarian. Any cherry grower knows how they stand in the markets, and further recommendation from us is not necessary. We have a limited number of trees on Mahaleb root.

Plums and Prunes

are again coming to the front. Prunes have paid well this year and their ready sale shows what can be done with a fruit so universally in demand, when the price is right and the quality above criticism.

Apricots Peaches
Nectarines

We have a good supply of the standard sorts, but stocks are becoming depleted fast. If you contemplate planting this season put your order in now. Don't delay! This is good advice to follow.

CALIMYRNA R FRESNO

Figs

One of Our Great Specialties

In the lead stands the CALIMYRNA, the fig above all others for commercial purposes. Ours is the only orchard in the United States producing these figs on commercial scale. When you buy trees from us you get pedigreed stock. Our seal must be on your trees if you want the genuine article.

Almonds

The Hatch varieties sold for from 13c to 15c per pound this year. Better put in your order at once. The best trees always go out first.

Chestnuts Pecans
Pistachio Nuts

We carry these both in grafted trees and on their own roots, in the very best varieties, of course.

Walnuts

Placentia Perfection is the great money winner, selling for 18c per pound this season. We have trees on their own root, as well as a magnificent stock grafted on California Black Walnut roots. Prices for grafted trees lower than ever before. A fine stock of all other varieties in grafted and also grown from selected seeds.

Olives

California Olive Oil and particularly Ripe Olives are forging to the front after years of earnest and persistant effort to introduce them. We have all the standard pickling and oil sorts. The demand is good and leading varieties are going fast.

We are Universal Providers for Orchard and Garden

We do not confine ourselves to Fruit Trees alone, but grow also an immense assortment of Ornamental Trees and Shrubs, Climbing and Trailing Plants, Palms for House Decoration and Outside Planting, Roses in Tree and Bush Form.

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Paid-Up Capital, $200,000.00.

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Geo. C. Roeding, President and Manager
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The orange growers of Lordsburg re much interested in the novel manner of packing oranges which is to e adopted by the La Verne Citrus ssociation. The oranges will be laced in separate cardboard compartments, each carton containing welve oranges, a number of cartons re then packed in a crate.

San Dimas Citrus Nurseries

How to Grow Oranges?

Easiest thing in the world—next to getting rich. All there is to do to get rich, you know, is to get lots of money and keep it.

To grow oranges—fine ones that bring big money—you must have Good Trees, Good Soil, Right Climatic Conditions, and a hundred and one other things.

But if the hundred and two or three other things are just right and the trees—the little nursery trees—are stunted or indifferent as to pedigree, failure, or but poor success will result.

Therefore start right

Get a copy of "How to Grow Oranges," which contains a fund of information. To be had for the asking.
Then buy the best trees to be had and save years of exasperation.
The best only are grown at the San Dimas Nurseries. Thrifty, stocky roots. Buds true to name and of strong bearing trees.

Write at once for "How to Grow Oranges, addressing
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PROPRIETOR
SAN DIMAS
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CITRUS FRUITS

PREPARING A CITRUS STOCK BED.

Editor Cultivator:—Will you be kind enough to tell me through the columns of your paper how to prepare a citrus seed bed. When is the proper time and where can the seed be procured?
be procured?—Jas. H. W., Bardsdale.

In preparing a citrus seed bed, the earth should be excavated to a depth of two feet and th hole filled in with soil run through a quarter-inch mesh sieve to remove all hard lumps and stones. Running a little well rotted stable manure through with the dirt will hasten the growth of the nursery stock. If the soil contains hard lumps or small stones, the roots of the seedlings will turn around them and make crooked, unsightly taproots. This is not of so much importance as it used to be, when a large number of orange trees were sold with bare roots, but still the straight roots are preferable, as they do not branch out so much at a shallow depth.

The seed should be sown half an inch apart in drills six inches apart and covered an inch deep with clean sand. Shade with burlap or muslin and keep the surface of the bed damp, do not allow it to dry out.

Seed may be obtained from any healthy seedling orange tree or pomelo tree. The fruit should be bruised and packed tight in a box or barrel, and when rotten wash the pulp out and separate the seed. Put the seed in a sieve and pour dry sand over them so that they will not stick to the hands and sow them in the drills as refered to above.

The soil in the seed bed should be thoroughly settled with water and leveled before the seed is planted. The drills should not be deeper than the diameter of the seed. The one inch of sand will cover enough. One half inch of sand is enough, and the seed will come up sooner, but with such shallow covering there is danger of them becoming a little too dry, which is fatal at the time of germination. The seed may be secured and planted any time in May.

Citrus Trees at Cloverdale, Sonoma County.

CULTIVATING CITRUS FRUITS.

If we have such a February as indications now warrant us in expecting little can be done in this line until the bulk of the heavy rains are over. The more you cultivate in a wet season the more the soil runs into a solid mass without any life to it. Better wait until the ground gets warm and the heavier rains are over before doing anything in stirring the soil, and probably March would be plenty early enough to begin. However, much can be determined by the character of the rainfall in February. Bounteous rains in February give promise of rains as late as April or even May, so there is always opportunity to recover from tardy work.

The Chicago Packer speaks from an advised standard when it declares "The California fruit and vegetable growers are squirming more than ever under the burdensome yoke of the marketing trusts, private car line extortion and high freight rates. For years the California producer has sealed his mouth, evidently considering it suicidal to openly oppose the fruit and vegetable distributers commonly known as trusts. Year after year he has labored, but without benefit to himself because of the extortionate cost of marketing. Ground down to the limit of endurance and furious at the treatment accorded him, the grower is openly kicking. If the ball ever starts rolling right in California there will be something doing all along the line and some strange faces may be found among those handling Pacific coast oranges as well as vegetables.'

CITRUS SEED BED STOCK
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PHONE 949 R. D., PASADENA, CAL.

Valencia Late

And all leading varieties of orange and lemon trees, and Marsh's seedless grapefruit. Trees one and two years old. Extra fine and thrifty and no scale. Plenty of fibre roots.

H. H. LINVILLE, Highland, Cal.

VALENCIA LATE

And all the leading varieties of Orange, Lemon and Marsh's seedless Grape Fruit Trees for sale. Are principally two years from bud and very fine. Can furnish from my nurseries at Glendora, Riverside or Redlands, as desired. Address

Redlands Nurseries, E. I. Martin, Prop., Redlands, Cal.

Citrus Trees

The Philippi Nurseries
Rocklin, Cal.

THE OLD ESTABLISHED
WOODBRIDGE FERTILIZERS
— ARE RELIABLE —
THE WOODBRIDGE CHEMICAL WORKS
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Stop! Listen!

Buy Orange Trees that are true to name. I do not own the largest nursery in the world, but can produce the best trees in the world, and can beat the world on prices, according to quality.

H. M. Cole Third House S. Hill Ave. Pasadena, California
Sunset Phone Main 450

10 per cent gross on every car is being saved by growers using the new patent Cyclone Car Cooler (Famous Intermittent Vacuum Method). Address today Chas. F. Edson. Manager Citrus Cooling Company, 950 West 20th Street, Los Angeles, Cal.

ORANGE TREES

Oldest Established Citrus Nursery in California, at Alhambra, Los Angeles County

Late Valencia and Washington Navels, Lisbon and Eureka Lemons. Guaranteed true to name. No better trees in this State. Lowest market price. Three-year buds, four-year roots. Horticultural Commissioner's certificate. Order early, as good trees are scarce. Inspection invited.

E. G. Wood, Owner, at Nursery or Room 732 Huntington Building, Los Angeles, Cal.

BY ERNEST BRAUNTON, LOS ANGELES, CAL.

ORNAMENTAL PLANTING.

Too many farmers would rather have their path from the kitchen or front door of the house and the barn between two rows of corn than to see a nice bluegrass lawn, nice shaded trees, shrubs, roses and other beautiful flowers, nicely arranged about the house. They think it is for the good of the families that they utilize every foot of ground possible for the production of corn and other grain, but surely they are therein mistaken. It is no wonder that the young folks on such farms get tired of the rural monotony and are off to the city. The onamentation of country homes is nearly if not quite as important as the production of the best fruits and vegetables. What is there that could be more fascinating to children than an abundance of good fruit and beautiful flowers? It teaches them to observe nature, and when they once learn to understand more about the beautiful work of nature they cannot be driven from their beautiful home in the country. Never mind about the location, for it matters not where you live or what may be the lay of your grounds, you can make it beautiful and interesting by planting the right kinds of fruits, vegetables and flowers in the right way and attending to them properly. Now, don't say or think that it is too much work, for without missing the time you can make a wonderful improvement if you only set your head to it.

It is really a pity to see how the young men are swarming to the cities for employment when they could do so much better by staying on the farm, if they only knew it. When I say that the average farm boy leaves home because it is too monotonous I think I can prove the correctness thereof with the statement that there is not one young man leaves a fruit farm with beautiful surroundings to where there are ten leave the average grain farm where fruits and ornamentation are overlooked. I know there are more grain farms than fruit farms, but when I make the above statement I am speaking comparatively. Is it, then, not worth our while to give a little more attention to those important things? That persistent struggle for the almighty dollar is supposed to be for the good of your family, but I am sure you will succeed much better in the contentment and health of your family by changing your plans in the manner indicated above.—E. H. Riehlin, F. & F. World.

WIDE AWAKE VILLAGES.

It has remained for the town and village improvement associations to teach us what it means to have yards that are attractive from curbstone to alley. They have educated children to have a proper regard not only for the premises on which they live, but for their share in beautifying the public school grounds teaching them that when they deface its walls, break windows, pull up its flowers and destroy its trees they are despoiling their own property, a very foolish thing to do, to say the least..

GARDEN BEAUTY.

The chief beauty of the garden should lie in its flower-colors and plant forms, and not in the symmetry of its beds and borders. If our ideas of a perfect garden include any rigid geometrical principles, we would better study nature and let our ideals go! Our ideals, at best, are extremely limited, while nature's realism is immeasurable; she puts so much variety into her reality that she is more beautiful than we can imagine, by sheer force of quantity! . . . We should seek to display the whiteness and purity of the lily in the garden, and not trouble ourselves so much about the brown earth patch from which it grows.—F. S. Matthews.

RETAIN NATIVE TREES AND SHRUBS.

In making plans for the house surroundings, do not forget to consider the views over the farm. Every practical man well knows that thickets of shrubs and many fine trees cannot be retained to a great extent in farm fields without making these fields less valuable for farming purposes. There are usually places, however, on every farm, in swampy places, along stream sides, or steep or barren slopjes on ledges, in narrow strips of land along the roadside, at the junction of fields, that can never be made of much value for farming purposes. Almost every reasonable man will see that it is more desirable to retain the trees and shrubs on such land, for it adds to the beauty of the landscape without detracting from the value of the farm. If is often a measure of economy, too, to have the steep slopes covered with a thick native growth in order to prevent them from gullying and to prevent the expenditure of useless labor in keeping them in order. A thicket of trees and shrubs, if let alone, will take care of itself and require no especial attention. If it be sufficiently extensive, it will also be practicable to secure from the growth upon it pieces of timber that are required for the repair of various farming implements, or for firewood, without destroying the few fine trees or the groups of fine trees, that would be reserved as interesting objects in the landscape. Other men, having appreciation of the beauty of fine trees, will be willing to sacrifice a small piece of tillable ground for the sake of preserving now anad then a specimen to add to the general beauty of the landscape.

LOCATING SHRUBS FOR EFFECT.

Many, and indeed most, of those who enter with enthusiasm on the improvement of their home grounds devote both time and money to the securing of trees for this purpose, and frequently too many of them; and then, deeming their task complete, "retire upon their laurels." When, however, the trees begin to shoot upward, and, shedding their lower branches, open up the grounds again to the searching winds, it is seen that without the co-operation of their more humble allies, the shrubs and dwarf trees, their mission is but poorly accomplished. Much more effective, even as a shelter-belt, will a group of trees become if its borders be extended somewhat by shrubs from the neighboring hills and canyons.

A RARE COLEUS.

Coleus thyrsoides is a new departure among coleus by being a desirable-flowering plant. It more resembles a salvia than a coleus, producing long spikes of quite showy blue flowers.

THEODORE PAYNE
SEEDSMAN AND NURSERYMAN

HAS REMOVED TO
345 SOUTH MAIN STREET

HEADQUARTERS FOR SANTA BARBARA SALT-BUSH (ATRIPLEX BREWERI)

LILLY'S BEST

ROSES.

Invite the Rambler Family
and Have Them Bring the Baby

The Ramblers are the aristocrats of all Roses. The Baby Rambler (Mme. Levavaseur) is a dwarf crimson beauty which blooms with all the luxuriance of a climber. The Baby is ever-blooming and while it attains a stature of only twenty-four inches it contains as many roses as you would expect to find on a bush five times its size. The Baby is the pet and the pick of the Rambler family.

The demand for the Baby is large and we fear that our supply may not hold out. You and your friends had better place your orders early. Home is not a home without a "Baby."

Prices, one Baby Rambler root 75c; Six, $3.50; Per Dozen, $5.00

Our rose roots are Northern, out of door grown. They are hardy roses and are packed for shipment with extreme care. They will arrive in perfect condition ready for immediate planting.

Crimson Rambler—Grandest climbing rose ever grown, presenting its crimson blooms in pyramidal clusters which contrast beautifully with the bright green foliage and keep their color for weeks. Very hardy and will grow most anywhere. Each.........35c

Our 1905 Catalog is the Largest, Best Printed, and Most Comprehensive Seed and Plant Catlog issued on the Pacific Coast. You want it if you love Nature.

Philadelphia Rambler—Similar to Crimson Rambler but deeper in color and more double. Each............35c

Pink Rambler—Like the other Rambler in habit of growth, producing in cluster of from ten to thirty blooms of a shell pink, fading to almost white. Each......35c

Dorothy Perkins—The best Pink Rambler. As hardy as Crimson Rambler and of the same habits. Blooms more double and curled, and holding their color a long time without fading. Each.............35c

White Rambler—Almost identical with Crimson Rambler except the blooms are pure white and very sweet scented. Each.................................35c

This is a healthy family baby and all. They do not mildew or become easily a prey to insect growth. They are all sure bloomers.

This family of Ramblers (including the baby) sent to any address for $1.50 charges to be paid by purchaser.

FILL OUT AND MAIL TO
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SEATTLE
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Enclosed is $ ..... (in money order, draft, 2c stamps) for which send me the following rose roots, by express, charges collect :
.........Crimson Rambler at 35c each .... $ ....
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.... Pink Rambler at 35c each ... . $........
.... Dorothy Perkins at 35c each .... $ ....
.... White Rambler at 35c each .... $........
.... Baby Rambler at 75c each .... $ ....
.... 6 Baby at $3.50 for six . . .. $ ....
.........Dozen Baby at $5.00 per dozen ..... $ ....
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New 112 page catalog of Seeds and Plants sent free on request

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First National Bank, Los Angeles, Cal.

In the Vegetable Garden

ORIGIN OF VEGETABLES.

Cucumbers are from middle and southern Asia and have been cultivated from a very early date. Asiatics claim they are "good for stomach troubles" and no doubt they are correct; they certainly are not good for one who has such troubles.

The nativity of the musk melon seems uncertain. It probably came from Persia. It has been cultivated in England since 1570, having been introduced from Jamaica.

The pumpkin was introduced in the same year, from the Mediterranean region, though its original home has not been satisfactorily determined.

The tomato (German, love-apple) was sent to England from South America, its native country, in 1596, and from there introduced to the West Indies and the United States.

The watermelon has been in cultivation so long that authentic history on its nativity is lacking. It seems probable that it is native to the warmer regions of the Old World.

SOIL FOR PLANTING.

The soil should be moist when the seed is put in it. Many persons prefer that the planting should be done just before a rain; but in this practice care must be taken against the baking of the soil over the seed. It is usual to firm the earth above the seed by patting it lightly with a hoe or walking over it, placing one foot close to the other. This is to make sure that the soil is brought close against the seed.

Small, weak seeds must not be put in the ground that bakes, or is not thoroughly prepared. It is well to sow some large seed of vigorous growth, such as radish or turnip, with celery and other small weak seeds. The added seed comes up, breaking the crust, so as to let out the weaker plants. Also they show where the row is, and this makes way for cultivation before the crop is up. Of course the radishes or turnips must be pulled up as soon as the other plants appear. Celery and other seeds that germinate slowly should be shaded.

Most seeds must be sown much more thickly than the plants can be profitably grown. If they come up, well thinning is necessary, and this should be done, as a rule, as soon as the first true leaves appear. In thinning care must be observed not to loosen the roots of plants that are left.

CABBAGE.

The best soil is a deep, rich loam, well worked. Positions shaded during part of the day are to be avoided, for cabbages require abundant light and warmth. A liberal amount of stable manure or other fertilizer will make good returns.

The young plants should be started early and transplanted in hills three feet apart. It is best to wait for a rain before setting out, but shallow drills may be made and soaked with water over night. A light mulch should be applied to the plants when set. In dry, hot weather water should be given liberally and freshly set plants shaded if possible.

HOTBEDS.

In the colder regions of California the farmer can build and use a cheap hotbed with great satisfaction. The labor and material needed are small. A January hotbed will supply green things during February and March. Every farmer's table will appreciate these good things in late winter. The fresh lettuce, radishes, beets, carrots, spinach, etc., to be grown are a boon to any farm family.

It is so simple and easy to have these things. First select a sheltered spot behind a barn or tight fence or a southern slope. Dig a hole one and one-half feet deep, four or five feet wide, and as long as wanted. Put stable manure in this to a depth of six to twelve inches and then cover with ten or twelve inches of good loamy soil. Now build a cheap frame of wood over this bed. Make it two feet above ground, level on the north (back) side and six inches above that level on the south. Throw loose earth up against this frame to keep out cold air.

Use either cheap canvas for covering beds or window sash. If only canvas is used very cold snaps may require the use of gunny sacks or other heavy cover for one or two nights. It is often more economical to do this than to buy sash. Sash gives more perfect protection, however. Canvas covers are tacked to rollers on lower edge for easy handling.

The frame must be kept carefully covered on cold days and nights, and opened to the sun on warm days. The bottom heat supplied by the manure at the roots of plants will force the crops wonderfully. Rain is very beneficial to such beds if not too copious. If the soil is kept very dry the plants burn. If kept too wet plants "damp off." A little ashes and sulphur sprinkled on top of the soil just after planting helps to keep out insects and make plants healthy.

Any family can use a hotbed five feet wide and ten feet long to advantage at this season. This is the place for growing relishes in winter, and starting plants in early spring when too cold for out-door planting. The truth is that such a bed in use in the colder or mountainous parts of California will put them way ahead of the season. In Southern and Central California the hotbed is rarely needed in winter. A cold frame in these regions is usually sufficient. In making a cold frame, follow suggestions above given, except we must omit the manure. No bottom heat is needed in this case.

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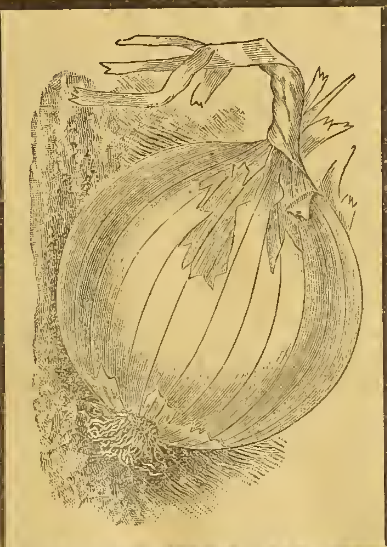

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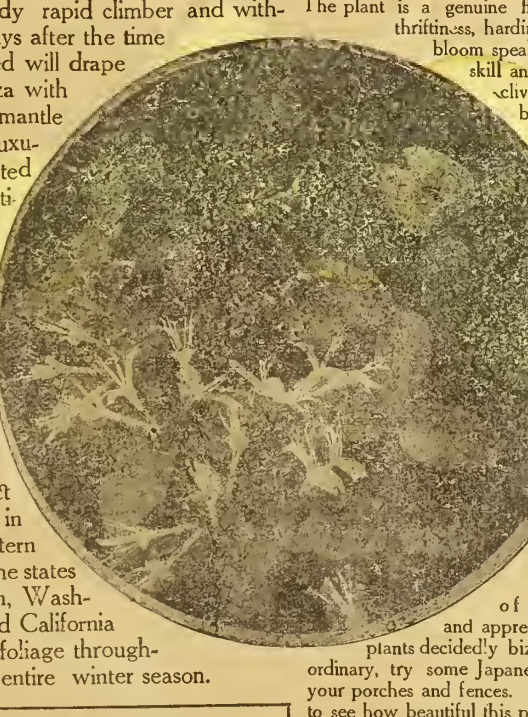

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C. H. SESSIONS, ASSOCIATE EDITOR

TO KEEP MOULD OUT OF CREAMERIES.

Mold in the creameries is one of the serious difficulties which the creamery man has to contend with, says a writer in the Farmers' Sentinel. When it gets thoroughly established it is extremely hard to get rid of, as it is a fungus growth which produces seeds or spores and multiplies to work into every nook and corner, from which nothing but severe measures will serve to dislodge it.

One little patch of mold in a damp corner, if left to itself, will, under favorable conditions, in time infest all parts of the building, unless it be dry and light. It will spread to the butter tubs and the spores will lodge there, and, even though they are not in evidence when the butter is shipped, they will develop, penetrate the wood, and form moldy spots on the butter. During the last few years losses in moldy butter have been sustained to the amount of many thousands of dollars.

Investigations have been made by the dairy experts of this country, Canada and Europe to ascertain the best means of preventing the mold from getting a foothold and to find a simple method of preventing its growth and of eradicating it. They have found that it takes as naturally to certain conditions as a duck takes to water. It develops the most rapidly where the temperature is but slightly above the freezing point and where there is but little circulation of air. One bad feature of mold is that it gets well established before it is much in evidence. Often the first intimation of mold that the unwary buttermaker receives is when he gets word from his commission man that his butter was moldy, or the receiver of his butter advises him to soak his tubs and liners in a strong brine in which he should put two or three ounces of formaline to the gallon of water.

To keep mold from the creamery the refrigerator should receive at least two good lime washings a year. On shipping days while the refrigerator is empty the doors should be thrown open to let in the light and afford a free circulation of air.

A little mold on butter tubs often lowers the grade of butter as much as 2 or 3 cents a pound and leads to much waste, as it frequently becomes necessary to scrape off and throw away considerable of the butter on the outside of the package.

Mold leads to the premature destruction of a creamery or any other wooden building in which it gets a foothold. It breaks down the substance of the wood and it becomes rotten and useless. Creameries do not stand half as long when infested with mold as they otherwise would. Barns or other outbuildings with leaky roofs and without proper ventilation or light soon become infested with mold which leads them to premature decay.

Laugh and forget it.

BUTTER PACKAGE MARKING LAW

Editor Cultivator:—Will you kindly publish the law passed by the last legislature relative to marking butter packages? There seems to be some misunderstanding as to its provisions.—A. E. B., San Luis Obispo.

The following is the full text of the act approved March 20, 1905, as passed by the legislature.—Ed.

Section 1. No person or persons, firms or corporations by themselves or their agents or employes, shall sell, manufacture or prepare for sale, offer for sale or expose for sale, or consign, ship or present to any dealer, commission merchant, consumer or other person any butter in packages containing less than six pounds and more than one-half pound, unless the exact weight of such butter contained in such package or packages, rolls, prints or other form of package, expressed in the number of pounds or ounces or in both pounds and ounces, shall be printed or durably and legibly marked upon the wrapper or other container of such butter in letters or figures, or in both letters and figures, not less than one-fourth inch high and upon the side or face of such package upon which the producer's or seller's name and address appears, and if such name and address does not appear, the weight alone shall be legibly and durably placed upon such package in letters or figures not less than one-fourth of an inch high.

Sec. 2. Whoever shall violate any of the provisions or sections of this act shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not less than $20 nor more than $100, or by imprisonment in the county jail for not less than ten days nor more than fifty days, or by both such fine and imprisonment at the discretion of the court.

Sec. 3. It shall be the duty of the State Dairy Bureau, now existing under the laws of this State, to enforce the provisions of this act and to cause the prosecution of any person known to be guilty, or that it has reasons to believe to be guilty, of violating any of the provisions of this act. It shall be the duty of the district attorney of each and every county in this State, upon application from the State Dairy Bureau, to attend to the prosecution in the name of the people of any action brought for the violation of any of the provisions of this act within his district. One half of all fines collected for the violation of any of the provisions of this act shall be paid to the county in which the fines were imposed. The other one half shall be paid to the State Dairy Bureau and by said Bureau to the State Treasurer, and the same shall become a part of the appropriation made by law for the use of the State Dairy Bureau.

Sec. 4. All acts and parts of acts inconsistent with this act are hereby repealed.

Sec. 5. This act shall take effect sixty days after its passage.

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The low can is only one of many advantages Dairy Tubulars have over all others. Dairy Tubular bowls are simple—"back breakers" are complicated. Tubulars are self-oiling—no oil holes to fill up. "Back breakers" are oil drippers and oil wasters. To learn a lot more about Tubulars, write today for catalog N-260
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Which way do you skim your milk?
It is hard sometimes to realize just how great the loss of cream is with crocks and pans. Some people may not believe that a
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CREAM SEPARATOR
skims enough closer than the old way to increase their butter yield one-fourth or more. But it does. Users say so. Here's an every-day example—
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"We purchased one of your No. 6 U. S. Cream Separators in 1902. It is all right. It has given the best of satisfaction with no repairs. It is as good as when we got it. We have ten cows and make about **one-fourth more butter** than the old way. It saves me a lot of work—washing pans and carrying milk down cellar, and gives warm, sweet milk for calves and pigs. We would not be without one for three times the price we paid for it, and consider the U. S. the best on the market.—Mrs. MAGGIE KIDD."
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MAKING THE BEST OF BUTTER

That is what we all want to do. I am sure there are very few who are satisfied with their present attainments in this direction. Here and there may be found some one who will tell you, with apparent sincerity, that they believe they are making the best butter possible to be made. This must be a decidedly comfortable feeling to have; but as Mr. Moody once told a man who made the public declaration once that he never committed any sin, "I would like to talk with your wife about that!" The sure test of good butter is in the eating; and it is quite possible that if some of the so-called best butter could be submitted to a tribunal of competent judges, much of it might be found to be, like the now notorious Rockefeller contribution to the cause of foreign missions, more or less "tainted."

But setting aside the self-satisfied few, it may be stated as a general proposition that we all want to make better butter than we do. We want to do this for several reasons. In the first place, we have a pride in our business. We want to out-do everybody, ourselves included. The value of bringing away from the county fair a bright new blue ribbon, lies not so much in the premium which goes along with the ribbon as it does in the fact that we have been found worthy to hold the ribbon.

And then there is the value in the money which comes from our labor which is well worth striving for. There is nothing wrong in thinking about the dollars and cents which our butter will bring when we come to place it on the market. Money has its place, and it is necessary to the well being of us all.

The question is then, "How can I make better butter this year than I ever made before?" To answer this in a concise way is the purpose of this article.

To begin with, every farm butter maker should study her own methods. Are they the best possible? If I fail, where is the point of my failure? Satisfied on this point the rest naturally follows. Pride and conceit should at the very outset be banished and we come honestly and humbly to the place where we are ready to learn from any one who can teach us.

Then we must consider our farm conditions. Have we the best and purest water that we can get? If not, that must be done. Without pure water the highest results cannot be attained. Have we a good place to set the milk? If not, surely this must be attended to. We must have a room, away from everything that would in any way affect the sweetness of the cream, and where the temperature is right to bring the cream to the surface as quickly as possible. If we have a separator, a most desirable apparatus in every well ordered dairy, the matter is easier. The cream then is all we need to care particularly about; and this must be stored for ripening where it will be free from any offensive odor, must be watched carefully, stirred to keep it uniform in the process of ripening and finally churned at the right time.

Another essential to the making of superior butter is neatness at every stage of the operation. From stable to package there can be no letting down of the standard here. So many times we hear it said "I'm sick and tired of reading about cleanlines in the dairy!" It has been written about and spoken about more, perhaps than any other one thing in the dairy; and yet, how many of us can truthfully say that we do our level best in this direction? And there are thousands of dairy kitchens in this country into which the mistress would be really ashamed to invite the visitor. Do we not all know this? Then, why sould we be so sensitive on the subject of neatness? It is a prime essential to success. Then let us ask ourselves if there is absolutely nothing for us to learn in this regard. Let us be patient about it.

Again, leaving the domain of the kitchen, is there nothing more we can do at the barn to insure better results? Are our stables as clean as they should be? Are the cows themselves the very best we can procure? There is a great difference in cows. One cow will make butter which will "stand up" under any and all circumstances, hard, firm, sweet, with long keeping qualities. While another cow, with just the same feed, will make butter which is soft in texture, under color, and quickly losing the delicious flavor so necessary to the best butter. Every inferior cow should be weeded out and replaced by one who can be trusted to do her part toward bringing success. To do this intelligently requires a close testing of each cow. Nothing else will do.

And then, are we feeding to the best possible end? Here is a wide field for study. But it is one in which the returns are almost beyond estimate. How to place before our cows the food which will make the best and purest milk and the most of it is a problem worthy of the attention of every farmer in this country. Good hay, free from weeds, supplemented by well-balanced rations of grain, especially in winter; clean pastures in which the grasses are unmixed with foul, stuff, pure water, freedom from annoyance of any kind which will disturb the animal comfort of our herds, regularity in the time of milking, gentle and sympathetic handling while this work is in progress—these are some of the things which the dairy farmer may do to supplement the efforts of his wife to carry off the palm for the best butter made.

Rapidly passing the essentials of extreme care in churning, uniform methods of salting and a system of packing as nearly perfect as possible, we come to the matter of marketing. A man or woman might make butter fit for angels' food, and still never get more than the common price for it. The greater part of the butter made in our country today sells at the price fixed by the poorest article placed on the market. The best butter should fix the price. For this reason every man must make it his business to find a market worthy of his product. He must not be content with the figures which are offered for the common lot of butter. For a time he may find it uphill work to establish a market for himself. It is always uphill business to compete with a thing that is worth nothing. But if he stands firmly by his principle, that good butter is worth more than poor, he will win in the end. Men will find that he is telling the truth when he says he has better butter than those who are willing to take whatever they can get, and then he will begin to reap the reward of his effort.

EDWARD L. VINCENT.

CARING FOR CALVES.

The method for caring for calves at the Minnesota Experimental Station dairy barn is told by P. D. Southworth in the Northwestern Agriculturist.

After the calf has run with the mother two or three days and has been put in good order by her colostrum milk he should be taken away and shut up in a small pen, a partition off from the large calf pen, so that he can not suck the other calves' ears, which is an objectionable practice to allow in a bunch of calves.

Now, right at this stage comes a critical time for the calf. White scours only too often attack him at this period and often, too, he is laid low by calf cholera. Now is the time to give a preventive. Take about a pint bottle of milk at the temperature of 98 degrees F., no cooler, and put in it a teaspoonful of any of the good cresote disinfectant compounds for sale in the market. This, of course, is a germicide and will kill the germs of the cholera in the stomach of the calf. I know this to be a good remedy, and if given in time will often save a calf's life.

The next thing a calf must learn to do is to drink out of a pail. This often takes time and patience. Be free with both, as a little dairy calf three days' old is pretty tender and must be handled carefully. First of all you must have that whole milk at the temperature of the mother's body, about 98 degrees F. The cause of most of the scours in calves is feeding cool milk. Dip the finger in the milk and then let the calf suck it off once or twice, meanwhile drawing his head in this way closer and closer to the pail, until his little muzzle is right in the milk. After he once gets his mouth into it he will soon learn to drink. He should be fed on whole milk for about a month, and then for two or three weeks on half and half, and can then be fed on skimmilk.

At the station we find it a good practice to put blood meal and bone meal in the skimmilk. Others use flaxseed meal with good success.

After the calf is a month old perhaps he will eat a little hay, and then you can turn him out in the big pen with the rest of the calves. Now, as these young animals are susceptible to parasites and diseases, and, as such pests thrive well in moist, dirty places, we therefore see that it is important that we keep the calves and pen clean by liberal use of fork and brush and occasional application of a disinfectant. Above all things the drinking pails must be kept scrupulously clean. It takes a little time, of course, but it pays, because it kills disease. Don't be afraid to use plenty of bedding to keep the little calves off from the damp floor.

The cheapest and the best method in every way for feeding the calves is with the stanchion. They are easily and cheaply made, and in the end will save you much time and money. Each calf then has his place and manger to eat out of, and in that way each gets his share of feed. There is no pushing and knocking over of milk pails and each is allowed to feed quietly by himself.

It is too often the case that the calves are simply fed, then left alone the rest of the time to shift for themselves, and then dairymen wonder why they get sick and are subject to scours. They must receive individual attention in order to give the best results, and they must be carefully watched. "Eternal viligance is the price of success."

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Won 25 ribbons, 2 Gold and 2 Silver Medals at State Fair at Sacramento. Cal., in 1904. The great imported boars, Chief Guy and Ohio's Chief, at head of herd. Also Black Minorca chicken eggs in season. Stock for sale, also bred sow. W. R. McCASLIN & SON. Walsh Station, Sacramento County, Cal.

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Having sold my ranch I am forced to sell Golden of Biltmore 60082, a grandson of Golden Lad's. Golden of Biltmore is one of the best, *if not the best* sire on the coast. Several of his daughters less than two years old selling for over $200 each. Highest bidder for next sixty days takes him. If everything is not just as represented, I will give anyone the ***bull free of charge. I sell on merit.***
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—ST. LAMBERT OF RAMONA, No. 62633,—
heads the Ramona Herd of Registered Jerseys of
Geo. W. Thomas, Riverside, Cal.

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OF REGISTERED JERSEYS
Offers sons of Marigold's Exile King, out of cows that are now making high official yearly records. For particulars write
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The Whiting Jersey Stock Farm Co.
Have moved their herd of Jerseys from San Bernardino, Cal., to the famous Imperial Valley, and hereafter their post office address will be Heber, San Diego Co., Cal., from which they will conduct all their business. Abundant green feed every day in the year will be of great advantage in the best development of our young stock.
Whiting Jersey Stock Farm Co., Heber, San Diego Co., Cal.

LEMONITA HERD
EFFINGWELL RANCHO, WHITTIER, CAL.
Service bull "SARGENT FOX," 64833. Bred on the Island of Jersey. Sire, the great Flying Fox, that sold at auction for $7,500. Dam, Miss Sargent, reserve winner over Jersey; winner of seven first prizes and five championship cups. "One of the grandest cows the island has ever produced."

Jersey Mead Stock Farm
HIGH CLASS REGISTERED
JERSEYS, POPULAR
STRAINS
GEO. E. PLATT, 316 E. 8th St., Los Angeles, Cal.

Oakhurst Jerseys
Sons of imported Golden Marquis out of prize winning and tested dams. for sale.
L. Bradbury Duarte, Cal.

Kings' Victor King of St. Lambert
At head of herd. Young stock for sale.
H. N. WILLIAMS COMPTON, CAL.

La Palma Stock Farm
We have some of the very finest Registered Poland-China Swine from 2 to 6 months old, both sexes, for sale. Also older boars ready for service.
Also a fine Registered Jersey Bull and Six Registered Cows for sale.
Write for what you want.
J. A. CAMPBELL, Buena Park, Cal.

MRS. A. BASLEY, ASSOCIATE EDITOR, HOLLYWOOD, CAL.

BROODER CHICKS.

(Continued.)

Well bred chicks are naturally hardy. Feeding with some end in view, breeding along the same lines there should be steady headway made from year to year. Chicks born of strong, healthy parents come into this world about as well fitted for the stern battle of life as any young animal. Given half an opportunity, fed within the bounds of common sense, and properly brooded, it seems practically impossible to kill them. Fed improperly, crowded in brooder, or having weak parents on one or both sides, and the reverse seems to be the result; they are as delicate, puny and unsatisfactory little objects as can be found.

There are a number of methods of feeding young chicks, any one of which in the hands of an expert, will give good results, but the one that gives the most universal satisfaction under nearly all conditions is the dry feed method. Good, dry "chick feed." This can be purchased ready mixed at the poultry supply stores. It is composed of about a dozen different grains and grit, with a little charcoal, dried blood or beef scraps. I sometimes make my own chick feed by mixing cracked wheat, steel cut oats, Kaffir corn, millet, rice, pearl barley, rape or mustard seeds, beef scraps, granulated bone. I put more wheat and oats into this mixture, using them as the foundation. The chick feed that I buy has in addition some other seeds, such as canary, hemp, rape, etc. I buy chick feed to save myself the trouble of mixing, but there is an advantage in mixing one's own—one knows what one is feeding. Chick feed scattered in the litter, so that the chicks will have to exercise for it, and rolled breakfast oats is the main feed until they are six or eight weeks of age.

The use of a hard grain diet like "chick feed," develops the digestive organs and keeps them in good condition. Where soft and easily digested food is used, the gizzard has not sufficient exercise, the inner membrane becomes soft and flabby, and the digestion is impaired.

When hard, dry grain is used, which is nature's method, the digestive juices are called into full play, the muscles of the gizzard are given plenty of exercise and the result is vigorous and sturdy chicks. The "chick feed" prepared by reliable firms is undoubtedly the best food for young chicks. It gives them all they require except the green food to build up a strong and healthy frame. In the chick feeds wheat, oats and corn are the staples. The other ingredients are what might be termed the side dishes. They are all good and add either variety or spice, and "variety is the spice of life."

* * *

Chicks enjoy a variety as much as we human beings do, and they need it as much. In a wild state of nature the seeds of weeds and wild flowers would give them a great variety, but no wild chicks would even get a mash. Any one who has ever fed "chick feed" and seen the good results of this, the easiest of all ways of feeding, will be reluctant to return to a mash.

Johnny cake as a variety once a day is good when properly baked.

Chicks at first require food every two and a half or three hours, or about five times during the day. After they are three or four days old they should have two feeds a day, of some bright, fresh green food like lettuce, cabbage or the fresh green shoots of sprouted grain, and where it is pospible to give them a clean grass run, it will benefit them greatly.

I feed them five times a day at first, and I always leave a little feed trough or hopper full of chick feed where they can get it. I know this is contrary to the advice of many, but I found the weaker ones did not get the proper amount of food when all rushed for it and it was a comfort to me to know that they had food before them if I happened to be detained at the usual feeding time. Also the chicks were not apt to overload their little stomachs if they had dry food always ready.

The first meal should be at 6 or at sunrise. This should be "chick feed," and should be scattered in the litter, in their outside room or exercising room. I have found it very convenient to scatter this feed at night, and to wash out and fill the water fountain at the same time so as to have it ready for them as early as they want it. They come out at daybreak, eat a little and sometimes drink, and then go back under the hover for another nap. At 9 o'clock, when I scald the drink fountains, filling the milk fountain, I give green food. If a lettuce or two is given them or hung up by a string, they will keep busy and amused for a long time. A sod of grass, a box with mustard or rape or lettuce growing in it, a bunch of tender greens, dandelion, alfalfa or clover. If these cannot be procured, chop up finely some beets, turnips, or even potatoes, for they must have green food. Three hours later, or about noon, "chick feed" is again in order, scattered as before, in the litter. One word about the litter; the best I have found for little chicks is alfalfa hay cut in a clover cutter a quarter of an inch in length. Two hours later some more green food and a full hour before sunset, a last good feed of chick food. I like to send them to bed with good full crops, so the last meal is supplemented with something extra, Johnny cake or egg and bread crumbs.

I can get stale bakers' bread at a cent a pound. I slice the bread, dry it, then either roll it or grind it in the grist mill, and have always a supply of dry bread crumbs. About three times a week I give the chicks a supper of these dry bread crumbs mixed with hard boiled eggs and onion chopped very fine. Three pints of dry bread crumbs, one onion and from two to four eggs chopped well, and all very fine for one hundred chicks. This is in addition to the "chick feed." The onion is a good tonic, the chicks relish it and it prevents them taking cold. On alternate evenings they have Johnny cake. They prefer the egg and bread crumbs. I usually scatter a little good sharp chick grit in this just as I would sprinkle salt on our own food. Oyster shell does not agree with little chicks, it is good for laying hens, supplying the tissue for egg shells, but the little chicks do not require it and it is harmful to them.

Fed in the manner I have described the chicks will be plump and vigorous. At five weeks of age those that are to be sold as broilers should be separated as the treatment from now on will be different for broilers. For those to be kept as breeders the treatment is continued, gradually adding wheat, whole, and keeping a hopper of bran, cornmeal and beefsteak always before them.

To sum up in a few words the rules for successful brooding are—comfort, exercise, proper food. Comfort means warmth and cleanliness, sunshine and shade. Exercise—scratching and running out on range. Proper food—grit, green stuff, grain, animal food and clean water.

* * *

EDITOR'S QUESTION BOX.

Apoplexy. — (Mrs. M. D., Kern.) Could you please tell me what ails my hens and what to do for them? They are Black Minorcas; seem very healthy today and next morning find them dead under roost and the combs very red. Have lost six in one week. Th~ have plenty of green feed, grit,

Buff Orpingtons
and Barred Rocks

Standard Bred Eggs, $2 per 14. 3 sets, $5. Low prices on breeding stock.

B. M. Stone,
R. F. D. 6 Fresno, Cal.

SOUAB BREEDING

and Fancy Pigeons. Largest stock on the Pacific Coast. Homers in 500 pair lots Twenty (20) varieties of Fancy Pigeons. Safe shipments any distance.

THE OLIVE PIGEON LOFTS
P. O. Box 1177, Los Angeles, Cal.

RHODE ISLAND REDS

Fine large stock, heavy layers, best of broilers Eggs, $1 50 per setting.

J. D. Setzer, Northrup and Pedro Sts., San Jose, Cal.

WHY ARE EGGS HIGH?

We all know—because hens are not laying now. But why do poultry owners overlook this chance to make money? It must be because they don't believe our statement that

SECURITY POULTRY FOOD
WILL MAKE HENS LAY.

You don't have to take our word. You can be the judge. We can make your hens lay in from 2 to 4 weeks and

WE GUARANTEE IT.

Our dealer in your town will back up this guarantee. Ask him. Will you pass this chance to make money when we take the risk? It also puts sick poultry in healthy condition and keeps them so.

SECURITY STOCK FOOD CO.
MINNEAPOLIS, MINN.

WHITE AND BUFF Leghorns

Old and young stock for sale. Eggs after January 1. Write for prices.

J. F. Sarmento, R.F D. Box 4, San Leandro, Cal.

White Plymouth Rocks

NOTHING ELSE

The best utility fowl grown. The one that is being adopted by practical poultrymen who are in the business for the dollars produced. At the San Diego Show, just held, we won 13 out of a possible 15 premiums, 3 silver cups, etc. See our exhibit at the Los Angeles Show, Jan. 9-13. Eggs from standard-bred Rocks, $1.50 per 12.

WM. M. HUMPHRIES, 241 N. UNION AVE., LOS ANGELES

TO WHOM IT MAY CONCERN:

As the chicken raising season is at hand, we beg leave to call your attention to a few of our specialties: Do you need an Incubator? Our machines are fully guaranteed and have proven themselves unsurpassed wherever used. Do you need Brooders? We manufacture just what you want; fully guaranteed, made of the finest material and of the best possible workmanship, and, above all, a practical machine which saves the purchaser money, time and labor. Do you need Poultry Supplies of any kind? We manufacture a line of Supplies the use of which makes Poultry Raising not only profitable, but a pleasure. Among our specialties are: Our Water Fountains, our Self Feeder for Chicks; our Feed Troughs, large and small; our Lamp Fillers; our convenient Must Hatch Nest Boxes; our safe and sure Must Hatch Insecticide, our sanitary Must Hatch Disinfectant; our sure death Must Hatch Lice Exterminator; our Poultry Compound, a fine Spring and Fall Tonic.

In connection with the above list, all of our own manufacture, we can also furnish the following, which are indispensible to the Poultrymen: The No. 128 Clover Cutter, the Enterprise Bone Mill, the Ohio Feed Cutter, the Banner Root Cutter, the Enterprise Feed Chopper, the Ideal Duplex Feed Mill, and the Farmer's Boiler. Do you wish to make your own Incubator or Brooder? We can furnish you all the necessary parts for making an Incubator or Brooder, also plans for the best and most practical Poultry Houses. Did you ever purchase Just Hatched Chicks? We have a Hatchery of 50,000 chicks per month capacity, in operation the year round and have, for the past few years, been successfully shipping, in our specially constructed carriers, just hatched Chicks, to distances as great as 2,000 miles. If you need them book your order early, as our future delivery list is rapidly filling up. We can also supply White Leghorn hatching eggs in quantities desired. If you have not already received our catalogue, write for Catalogue B, and you will find therein a more detailed description with prices, etc., of the above.

Hoping to hear from you in the near future, we are, yours very respectfully,

MUST HATCH INCUBATOR CO.

Petaluma, Cal., Jan. 1., 1906.

PER 2 BUSHEL SACK $1.90 PER 2 BUSHEL SACK

BUYS THE WORLD'S FAMOUS
EGG FOOD NO. 4

MIDLAND

IF YOU WANT EGGS
YOU WILL FEED NO OTHER

Used by all the largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the GOLD MEDAL at the St. Louis World's Fair for greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1604.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A FILCHER, Commissioner.

And Now Comes New Reward for Merit:

Read the following telegram received from the Lewis & Clark Exposition at Portland:

"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

PETALUMA INCUBATOR CO.

Main Office and Factory, Petaluma, Cal., Box F. Los Angeles, 505 South Main Street
San Francisco Office and Salesroom, 33 Market St.

and charcoal all the time. I saw two die, and they seemed to have a convulsion. First I thought they were poisoned, but upon examining them found that not to be the case. Now could you enlighten me as to the cause and what to do?

Answer.—The symptoms, so far as you have given them, are thouse of apoplexy or of poison. The cause of apoplexy, which is the result of a rupture of a blood vessel in the brain, are due to stimulating food, to an overfat condition of the bird, to mechanical injuries, to violent exertion or excitement, and to straining in laying eggs, hens being sometimes found dead on the nest. There are no premonitory symptoms in the disease. The bird is attacked suddenly, falls nearly or quite insensible or dies on the spot.

In most cases treatment is impossible, as the bird dies before it can be administered. But as a number of cases have occurred in your flock it will be well to take some preventive measures. Balance the ration differently. Reduce the amount of fattening grain, such as corn, give the grain in the scratching litter so the hens will have to work and eat slowly. Give a tablespoon of Epsom salts in two quarts of water for a week. Increase the amount of green feed, and, if possible, give the hens free range.

I cannot help thinking that either you or your neighbors have poison out and that it has been carried to your hens by rats, gophers, squirrels, or mice. Unless you are a student of medicine you would find it difficult to detect the small amount of poison necessary to kill a hen.

* * *

Eggs for Hatching.—(R. J. S., Pasadena.) I would feel grateful if you would let me know in The Cultivator if it would do eggs "for hatching" any harm to keep them in an open cabinet. I have just made and fixed it in screen porch where the eggs will be exposed to the cold nights. The cabinet has three shelves, with holes bored to fit eggs large end down. I don't know if the change of temperature from night to day would render the eggs unfertile. Of course no rains can get at them.

Answer.—Eggs for hatching should be kept at a temperature of from 45 to 60 degrees. You are a better judge than I would be of the temperature of your porch at the different seasons of the year. I would greatly prefer keeping them in a more even temperature, as great changes are apt to hurt the vitality of the germ.

Could you not put your cabinet in a dark closet in your house or in a dry cellar? Also be sure not to keep them as you say with the "large end down." The little end should be down, otherwise the air space may float up to the "top side" and you lose the chick. It is very necessary to keep the air space in the large end, as I once realized to my loss.

* * *

Hens Not Laying.—T. H. M., Banning, writes that their eleven months' old pullets are not laying.

Answer.—There is something lacking in your hens' rations, some element of the egg is lacking. It may be the lime for the egg shell, in which case give more oyster shell or mix some lime in water as thick as pancake batter, let it stand twenty-four hours, then pour off about a pint of it on the ground in each pen. It will soon forms a dry cake on the ground. Crack a corner off each day for the hens to eat. Do not give them dry air-slacked lime; if they eat it they will die.

I think probably it is animal food they lack. A Plymouth Rock hen requires about six ounces of food a day. Divide in about this way: Three ounces of grain, one ounce of animal (bugs, worms, insects or meat) and two ounces of green food, preferably clover or alfalfa.

Sometimes a pullet will seem to need a slight shock or stimulus to start her laying. A week over feeding of meat will do that or a little red pepper for a short time, or one of the many egg condiments offered by the supply houses. A liberal supply of milk will often have the effect of starting the egg suply.

The combined Poultry Show of the Southern California Poultry Association and the Los Angeles County Association will begin in a large tent, or in three large tents rather, on the lot at the corner of Hill and Sixth streets, Los Angeles, next Tuesday afternoon. It will continue through the week and end at ten o'clock Saturday evening.

Large exhibits are promised from all sections of Southern California, and the poultry four hundred will be on dress parade and in their finest feathers.

Fanciers and utility men will enjoy a great week together.

The Los Angeles office of the Cultivator has been moved to 115 North Broadway, (upstairs.)

POULTRY FOR SALE

18 White Leghorn Pullets just commencing to lay, also 2 White Leghorn Cockerels and 2 Barred Rock Cockerels, Lytle strain.

Phone 663 OSSINA . OW, GLENDALE, CAL.

Toulouse Geese

75 head of Fine Stock to select from. Write

H. O Higgins, Box 741, Riverside, Cal.

WHITE LEGHORN COCKERELS

A few pure bred cockerels from heavy laying strains, $2.50, $3.50 and $5.00 each.

L. W. Clark, R. F. D. 4, Petaluma, Cal.

BARRED ROCKS, WHITE MINORCAS, INDIAN RUNNER DUCKS AND WHITE HOLLAND TURKEYS

Prize winning birds at Central California Fair, where 7 firsts were won in '05.

JOE McDONALD, R. F. D. 2, HANFORD, CAL.

Blue Andalusians For Sale

Several pairs and trios of handsome Blue Andalusians. Exhibition or utility birds. Eggs for hatching, $2 for 15. Mrs. J. S. Duff, 3145 S. Hoover St., Los Angeles, Cal.

BARRED ROCKS
EXCLUSIVELY
Send for 16-page 1905 Catalogue
H. R. CAMPBELL
Box O PETALUMA, CAL.

Eggs For Sale

Imported direct Indian Runner Ducks, prize winners in England. First prize winners at Hayward, Sacramento and Portland Lewis & Clark Exposition. Eggs, $3 for eleven.
Buff Orpington Ducks, prize winners.

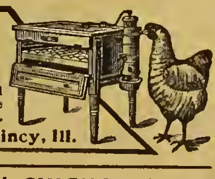
Mrs. M. E. Plaw - Fruitvale, Cal.

Breeding Cockerels

WHITE LEGHORN BLACK MINORCA

One hundred. Good Stock. A few pens of choice stock for sale. Write for prices

Avenue Poultry Yards Ventura, Cal.



$12.80 For 200 Egg INCUBATOR

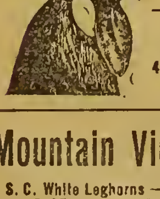
Perfect in construction and action. Hatches every fertile egg. Write for catalog to-day.

GEO. H. STAHL, Quincy, Ill.

WHITE LEGHORN CHICKS, 10 Cts.
WHITE PLY. ROCK CHICKS, 12½c.

Both from good stock and in good healthy condition. The W. P Rock males where I got my eggs are from prize winning stock. Leghorns are selected and have good markings. This is a fine time to start young chicks, after the rain; yards purified, green growth coming and mites and lice at a disadvantage.

Wm. A. Green, Box 401, Anaheim. Cal.



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BLACK MINORCAS
Still Lead
——Circular Free——
GEO. R. ALBERS
4849 MARMION WAY
LOS ANGELES, CAL

Mountain View Poultry Ranch

S. C. White Leghorns —Heavy layers. Eggs, $1.50 per 15, $5.00 per 100.

Indian Runner Ducks —Males for sale. Eggs, $1.00 per 13, $3.00 per 50, $5.00 per 100.

Mrs. J. L. Updyke - Fullerton, Cal.
Successor to Jacob Kreger

LAKENVELDERS

From Dr. A. H. Phels, New York.

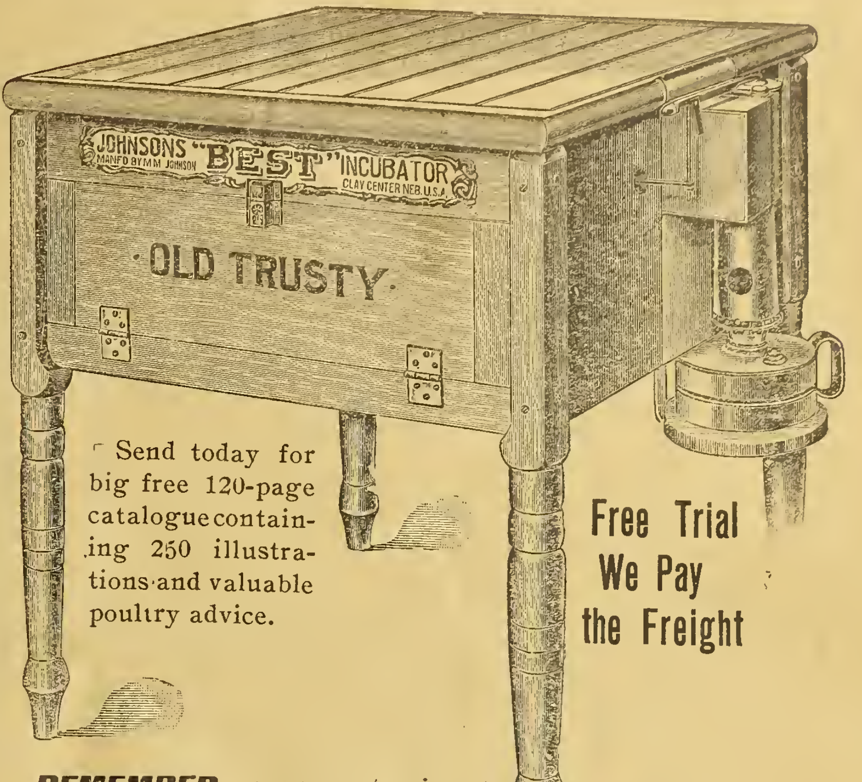
Eggs and a few young stock for sale. Also Buff Orpingtons, Brown and White Leghorns.

Ocean View Poultry Ranch

W. R. Shepperd, Prop., R. F. D. No. 1, Arcata, Cal.

The "Old Trusty" Incubator

The Incubator that sells for less than any other of equal construction, material and size, Sold on free trial. Agents wanted everywhere.



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The McClanahan Incubator Co.

819 South Main Street, Los Angeles, Cal.

Single Comb White Leghorns

Thoroughbred Stock. Eggs, $1.50 per 15. Send for illustrated catalogue.

John P. Boden, 138 Second Street, Watsonville, Cal.

SONOMA-AMERICAN
INCUBATOR

Send for large circular fully describing these machines.

Sonoma-American Incubator Co., - Petaluma, Cal.

Walnut Grove Poultry Ranch

Standard Bred White Wyandottes, (Hay's strain). Eggs for hatching from carefully mated stock, $2 per 13; $12 per 100.

F. L. Hogue - Carpinteria, Cal.

S. C. Brown Leghorn Cockerels

SPECIAL SALE

40 at $2 each; 20 at $3 each; 15 at $5 each; 25 Exhibition birds from $5 each and up. Eggs from my best pens at $3 per 15; second pen, $1.50 per 15. Send for illustrated circular.

W. E. Mercer - - Ventura, Cal.

Buff and Black Orpingtons
Buff and Brown Leghorns

Indian Runner Ducks—Bronze Turkeys

Eggs and Young Stock in Season

W. W. Bliss - Duarte, Cal.

SQUABS PAY BIG MONEY

Require but little care. Our carefully selected, high-bred homers, at $1.40 per pair, start you right. You cannot purchase such excellent stock at this low price anywhere. Our booklet C tells all about squab raising. 10 cents.

Bay State Squab Co., Wakefield, Mass.

WILLARD POULTRY FARM

MRS. F. T. HUNGERFORD, MANAGER, HYNES. CAL.

At the last Los Angeles Show our birds won twelve prizes. At the California State Show, Nov. 27th, 1905, on I. R. Ducks, three prizes on four entries. White Minorca and White Wyandotte eggs, $1.50 per 15, $8.00 per 100. Indian Runner Duck eggs, $1.00 per 13, $5.00 per 100.

INDIAN RUNNER DUCKS

A Specialty. Eggs, $1 for 13, $3.00 per 50, $5 per 100
C. A. McDONALD, BEAUMONT, CAL.

Choice Alfalfa or Chicken Ranch

Twenty acres good sandy loam soil, no alkali, abundance of water, 5-room house, large barn and incubator cellar. Near Anaheim.

WM. A. GREEN, BOX 401, ANAHEIM, CAL.

White Plymouth Rock Poultry Ranch

Eggs for hatching from First Class Stock, $6.00 per 100, $1.50 per setting 15 eggs.

J. T. DAVIS, Prop. POMONA, CAL.

Rose Comb Wh. Leghorns High-Grade Buff Orpingtons

Varian's Poultry Yards

P. O. Box 666. Home Telephone 1886
895 N. Catalina Ave., PASADENA, CAL.

BLUE RIDGE POULTRY YARDS WM. H. BROWN, Prop

Exclusive Breeder of Thoroughbred BLUE ANDALUSIANS

Eggs, $2.50 and $3.00. per 14 Exhibition and utility stock for sale 132 Ave 32 Los Angeles, Cal.

BUFF LEGHORNS

A few cockerels for sale. After Jan. 1 eggs from choice mated pens, $1.25 per 15

Chas. G. Miller, 40 Elm St., Watsonville, Cal.

Bronze Brown Turkey Gobblers For Sale

Weigh 25 lbs. at 15 months old. Prices—Gobbler and Hen, $12; Gobbler, $8; Hen, $6.

O. A. REEVE, Gilroy, Cal.

LINDGREN BROS. KINGSBURG, CAL.
McPHERSON, KANSAS
BUFF LEGHORNS BARRED ROCKS

Prize-winners at Chicago, St. Louis, San Francisco and majority of prizes at Portland on Buffs. Choice Cockerels and Pullets for sale.

STANDARD BRED BUFF ORPINGTON EGGS

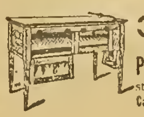
$2 and $3. Fertility guaranteed.

N. HAYDEN - ALTADENA, CAL.

Blue Andalusians

Three distinct strains, the Cosh, Morse and Griffith. Eggs per 15, $2.50 and $3.50. Incubator lots this year, $7.50 to $15.00 per 100.

MRS. T. R. GRIFFITH
Phone West 841. 3111 Walton Ave. Los Angeles



30 DAYS TRIAL

Buy From Our Factory—Save One-Third.

PRACTICAL INCUBATORS positively the best. Hatches more and stronger chicks. 10 YEARS' GUARANTEE

Cat. free. PRACTICAL INC. CO., 720 S. 11th St. San Jose, Cal.

THE OLD FOWLS.

What to do with the old hens is the question of the day. As long as they are shelling out eggs, of course, it is more profitable to keep them than to kill them. A hen not over two years old that proves an extra persistent layer is too good to kill, and should be kept over. But the main reliance for layers another winter, spring and summer must be the early-hatched pullets, and perhaps the hens of last year's hatching. All older hens have to go to pot before long, and the sooner they are disposed of after they stop laying in the summer. the better for the owner's pocketbook, and often for his comfort. For the fowls, old and young, are now beginning to crowd, and unless fed quite heavily, are bound to become troublesome and mischievous. If they can get into our gardens, fruit patches, tomato fields or melon plantations, there will be trouble. The easiest way out is to give them plenty to eat, so as to keep them laying as long and regularly as possible, or after that to get fat, and be ready for the block. Our experience is that we can gather the eggs in full supply as long as we supply the material, especially when we feed such nitrogenous foods as peas, soy beans, etc. Peas have seldom yet been appreciated as a poultry food and as egg-making material as they deserve. Bushel for bushel, they are worth, for that purpose, much more than is wheat, while frequently they can be bought for the same price, or even for less. Don't neglect a chance to buy peas for your fowls when they are easily worth $1 or more per bushel for poultry feed, as prices for grains are in these times. Soy beans are worth still more, but fowls do not like them so well, and a better way of feeding them would be to have them ground and used in mash form, with more bulky food. When you come to fatten the old fowls after their laying season, some corn should be added to the ration. In hot weather too much of this is bad for health. If rightly managed during the laying period, the old fowls are liable to be in good condition, and may as well be put on the market at once, and before their natural molting season.

POULTRY POINTS.

Q.—What causes roup in fowls?

A.—Damp hen houses, chickens crowding in small coops late in the fall, becoming warm at night, and catching cold when they come out in the morning.

Q.—What will it cost to keep a hen one year?

A.—From 75 cents to $1 a year. On a farm where the hens can have the run of the grain fields it will materially lessen the cost.

Q.—How many eggs should a good hen lay in one year under proper management?

A.—Upwards of 150 eggs. It will depend upon the strain of fowls you have. Some individual hens will lay as many again as others.

Q.—How can we select a good layer from our utility breeds?

A.—As a rule the hen with the small clean-cut head and a full bright eye and well developed in the rear part of the body will be a persistent layer.

Q.—Can a laying strain be bred up the same as a dairy cow?

A.—Yes, by using trap nests and watching your hens, and setting eggs only from the best layers.—Canadian Institute.

POULTRY NOTES.

When the hens are laying heaviest feeding is necessary.

An ounce of ground bone daily is sufficient for ten hens.

With all classes of fowls the early meal is of the utmost importance.

Fermented food is dangerous and is apt to produce disease like cholera.

Poultry powders are rarely required for fowls that are fed and cared for properly.

The secret in growing large, fine chickens is to feed often and but little at a time.

It rarely happens that two breeds of chickens or turkeys can be kept on a farm without getting mixed.

A little flax seed meal mixed in the food will help the old fowls to pass their moult quickly.

Air slaked lime dusted liberally around the quarters is cheap and will destroy lice, gapes and roup.

One important item in fattening fowls economically is to supply the food in a way that is easily digested.

If you are not keeping pure bred fowls, at least be sure to get pure bred cocks to cross on your hens.

If a fowl becomes sick, separate it from the others and doctor it, as the disease may be contagious.

Culls will come out with the best of breeding, but if they are slaughtered early in life they will not produce others.

Vertigo in fowls arises from a disorganized state of the digestive organs or from the heat.

Make the perches about eighteen inches from the ground, all of one height and four inches wide. Allow no decomposing vegetable matter, no filth or dirt of any kind around the house, yards or anywhere on the premises.

If soft feed or milk is fed in troughs care must be taken to keep clean, scalding out regularly; otherwise there is considerable danger of disease.

While there is no good reason why the farmer should not have as good fowls as the fancier, it is an exceptional case when it will be best to keep more than one good breed on the farm.

One of the principal advantages the farmer can have is that his poultry will cost him but a small outlay for food, because they can find the greatest part of their own living.

Feed good, clean feed and just enough to keep the fowls in good health and thrift. Do not feed too often or too much and always feed in a clean place and in a cleanly manner.

See all things, not in the blinding and deceitful glare of the world's noon, but as they will seem when the shadows of life are closing in.—Dean Farrar.

Standard Bred S. C. White Leghorns
EXTRA LARGE BIRDS AND HEAVY LAYERS. Eggs, $2 per 15; $8 per 100; $60 per 1000 from January until July only.
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Author of "A Practical Poultry Plant for Southern California," $1.25 cloth binding. on sale by Calif. Cultivator

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S. C. WHITE LEGHORNS WHITE PLYMOUTH ROCKS
No more stock for sale. Eggs are running 80% fertile. I am booking order for future delivery, also supplying small orders on short notice. Get your orders in early, as there is going to be a big demand this season.
WHITE ROCK AND WHITE LEGHORN EGGS, $2.00 PER 15, $8.00 PER 100
My stock is utility and standard bred; customers everywhere attest their merit. There are no better fowls to be found East or West. Eggs and stock sold under an absolute guarantee.
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The original Adobe Incubator, capacity 3000 eggs. Adobe hot and cold brooder 360 feet long.
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Dean's Pacific is an Incubator built on scientific plans and has all the latest improvements. Every machine guaranteed. "Facts From Experience" and Catalog for the asking. Address **Dean's Place, 2509 Central Avenue, Los Angeles.**

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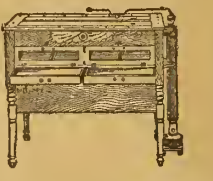
Don't believe all we say, out just enough to buy our Poultry Foods
Ask your nearest dealer for them and take no imitations
Emery's "B. B. & B."
THE PACIFIC GUANO & FERTILIZER CO. Successors to N. Ohlandt & Co San Francisco, Cal.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Is now manufactured under new management and is in every way put up as a first-class machine. Our 1906 model is a perfect working incubator, economical to run and gives a fine hatch.
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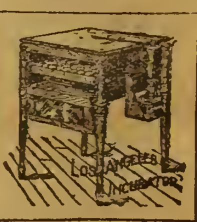

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Our big adobe incubator brings the best results. Send us your eggs and we will return the chickens.
YOUNG CHICKENS AND TURKEYS WANTED
We are prepared to buy all the healthy young chickens and turkeys you can send us and will pay above the market price. Ship by Wells Fargo express; we will pay the charges and remit balance to you promptly.
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Double Your Profits by Caponizing.
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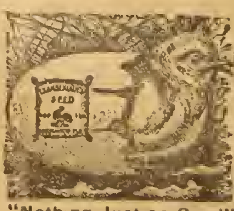
"Nothing Just as Good"
World's Chick Feed of To-Day. The only original **Dry Chick Feed.** All others are worthless imitations. **Chamberlain's Perfect Chick Feed** was used exclusively at the great St. Louis World's Fair during the 7 months. This the highest compliment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.

"Nothing Just as Good"
CHAMBERLAIN'S PERFECT MASH EGG FEED, THE WORLD'S GREATEST EGG PRODUCER.
GERMAIN SEED CO.,
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SPECIAL PRICES ON TON LOTS.
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When writing advertisers mention Cultivator.

General Agricultural Notes

PLANT FOOD.

Of the sixty-three or more elements known to the chemists the farmer and orchardist deals with only fifteen, which are known to be essential plant foods. These fifteen elements are oxygen, hydrogen, nitrogen, chlorine, carbon, phosphorus, sulphur, silicon, sodium potassium, calcium, magnesium, aluminum, iron and manganese. The first four are gases, the next four are non-metalic solids, and the last seven metals.

Twelve of the elements of plant food including nitrogen are supplied to fruit trees from the soil through their roots. The elements taken from the soil are limited in quantity, and constitute only from five to ten per cent of the weight of the plants, while those taken from the air constitute from ninety to ninety-five per cent of the weight. It so happens that the farmer and orchardist have only to deal with three of those fifteen elements, for while the others are all more or less essential to plant growth, they are found in sufficient abundance in a state of nature to meet all the demands of plant life.

Nitrogen, phosphorus and potash are the three elements most frequently lacking in sufficient quantity in our cultivated soils. They have been termed "the golden tripod of agriculture," because upon them depends the success of farming.

The necessity for the application of one or more of these elements will depend upon several causes. It is not infrequently the case that one or more of these elements may be found in sufficient quantity for the production of the kinds of crops cultivated. When such is the case it is manifestly a waste of material to apply an element of which there is already an abundance in the soil.

Again, different crops require quite different quantities or proportions of these elements. It is therefore important that we should have some knowledge of what our soil contains, and the requirements of the crop we propose to produce.

It is also important that we should know whether or not the elements already in the soil or those we propose to apply are in an available form, in order that they may be available to the plant or tree. They must be more or less readily soluble in water for all plants take their food in solution. In a sense they drink but they have no power of mastication.

Another important element of plant growth is the decayed vegetable matter, commonly called humus, without which all soil is barren. Prof. Schuppe says that the relation of the humus to the soil that contains it may be summed up briefly as follows:

1. It is the natural storehouse and conservatory of nitrogen which element is the most expensive of all plant foods when it becomes necessary to purchase it in the form of commercial fertilizer.
2. It furnishes the food upon which the soil micro-organisms live and which by their functions, convert its organic nitrogen into nitrates.
3. It possesses a considerable amount of mineral food constituents. These, in the further decomposition of the humus, a process continually going on in the summer, are liberal in forms available to growing crops. We have reason to believe from recent research that the mineral humates furnish a large proportion of the potash, lime and other minerals used by crops.
4. It serves to increase the absorption and retentive power of soils for moisture.
5. It regulates and protects against extremes of soil moisture.
6. It opens up and mellows heavy soils.
7. It serves materially to diminish the loss of fertilizing elements by drainage, thus permanently improving in the best way light soils.

EXPERIMENTS WITH CORN.

Experiments with corn at the Nebraska Experiment Station have just been compiled and published as Bulletin 91. Tests of a number of varieties of corn in different parts of the state have been continued. Something over one hundred farmers are engaged in these tests. It was found that no one variety of corn is equally well adapted to all parts of the state. By dividing the state into six sections, it was shown that certain varieties yielded best in certain sections and other varieties in other sections. The yields obtained by each experimenter are stated in the bulletin.

These variety tests showed that corn raised in central and Western Nebraska produced smaller ears than did the same varieties raised in the eastern part of the state. It was also the case that varieties with medium sized ears yielded better under average Nebraska conditions than did large or small eared varieties.

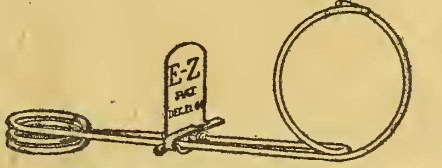
Corn was planted sufficiently thick so that it could be thinned out to from one to five stalks per hill, 44x44 inches apart. On good soil with liberal moisture supply, three stalks per hill gave the largest yield of grain, although the ears were smaller than where the planting was thinner. Experiments indicate that towards the western edge of the corn belt two stalks per hill are better than a large number.

The plats of corn having the thickest stand had the largest proportion of barren stalks. On the other hand, suckers are more abundant in the thin stand of corn. These suckers serve a useful purpose in producing ears when the stand of corn is thinner than the soil and moisture can easily support. In regions of sufficient rainfall it would not seem advisable to remove the tillers in the hope of improving the yield.

Experiments with seed corn from different states and from different parts of Nebraska lead to the conclusion that seed corn should be raised as near as possible to the locality in which it is to be planted.

Seed corn placed in a dry seed room in the fall gave twenty per cent better stand in the field than seed corn from the same field that was left in the crib over winter.

"GOPHER DEATH"
Kills Gophers, Squirrels, rodents 1500 tablets in box. 1 tablet kills a gopher, Price $1.25.
"RATICIDE"
Kills Rats and Mice. Price 25c. Ask your druggist for either, or send price, and we will forward free of charge. Send for sample or circular. FORT DODGE CHEMICAL COMPANY, 303 California Street, San Francisco



Ask Your Dealer
for the E-Z Gopher Trap
If he won't supply you send 45 cents and your dealer's name and we will send you three sample traps. Best and cheapest trap on earth
J. A. W. GATES, 216-218 West Second St. Los Angeles, Cal.

BEST TREE WASH **GREENBANK** 98% Powdered Caustic Soda and Pure Potash.
Copy of Analysis of competitive brand labelled and sold as "Powdered 98% Caustic Soda: Sodium Hydrate, 75.60%; Sodium Oxid, 58.59%. Signed: I. M. Curtis & Son, Analytical Chemists.
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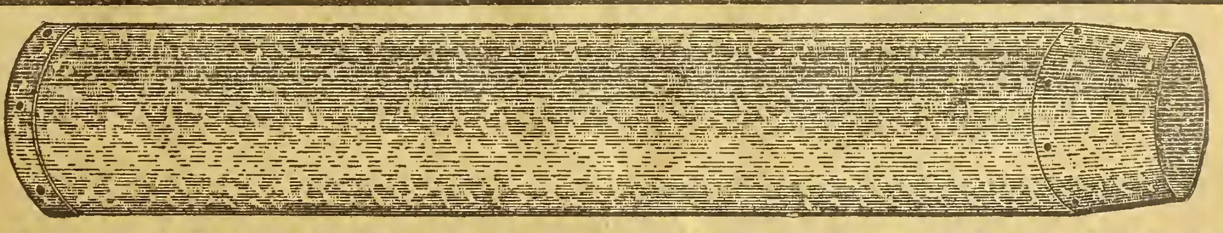

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SAVES WATER, GRADING AND TIME
The ***only*** way to ***Irrigate Alfalfa. Cheaper*** than ***Flumes.*** This is only ***one*** of our ***specialties.*** We make ***Riveted Water Pipe*** in lengths of ***Ten Feet*** from ***Single Sheets.*** Let us ***prove*** to you that we make ***Pipe*** and ***Tanks Right.*** WRITE FOR CATALOGUE.
TALLERDAY MANUFACTURING CO.
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ARE TWO AND THREE INCHES LONG—
BURBANK'S PHENOMENAL BERRIES
One will Fill a Cup. Dwarfs Giant Dewberry in Size and Excels Raspberry in Taste.
How to Get Hardy Roots.

The leviathan of the berry world is the latest California wonder, Burbank's Phenomenal Berry. Mr. Burbank has said: "It is larger than the largest berry ever grown." To those who know the conservative nature of the man his statements as to size and quality are the best guarantee that could be given.

It is a cross between the California Dewberry and Cuthbert Raspberry.

In color and flavor the new fruit closely resembles—some say "excels"—its rich-hued raspberry parent.

It's the Best Berry in the world
—LUTHER BURBANK.

Its liquid juiciness when pressed by the tongue surpasses the full-ripe dewberry in delicate consistency.

And most marvelous of all, to this toothsome fruit has been imparted a firmness which holds it in shipping conditions for days, making it one of the most practical berries for home or distant markets.

GROW IN HUGE CLUSTERS

The vines are inclined to trail. When properly supported, the berries are quickly and easily gathered. They grow in immense clusters of from five to ten huge berries, a sight to delight and amaze. No berry is so economical to pick.

We have grown a limited number of roots in our experiment gardens on Puget Sound, and can supply in quantities of one to one dozen.

The conditions under which these roots were grown insure that they are hardier and more robust than can be obtained from southern nurseries.

Use coupon in ordering. Price (prepaid) per root 35c; per doz. roots $3.
Order Now—The Supply is Limited.

LILLY'S KITCHEN-GARDEN COLLECTION OF BERRY BUSHES
Roots of 12 Standard Berries: 1 Logan Berry, 3 Raspberries, 2 Blackcaps, 2 Currants, 3 Blackberries, 1 Lucretia Dewberry, each one properly labeled, no two same variety. By express at your expense $1.00, prepaid $1.25. You can include one of the Phenomenal Berries at 25c when ordering this collection. Plant Lilly's Seeds

FILL OUT AND MAIL TO
CHAS. H. LILLY CO.
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Enclosed is $................(in money order, draft, 2c stamps) for which send me (prepaid)........................ Burbank's Phenomenal Berry Roots, and... .....sets of Lilly's Kitchen-Garden collection of Berry Bushes [........prepaid]
Please send me (free postpaid) your Plant and Seed Catalog.
Name ....
Address ....

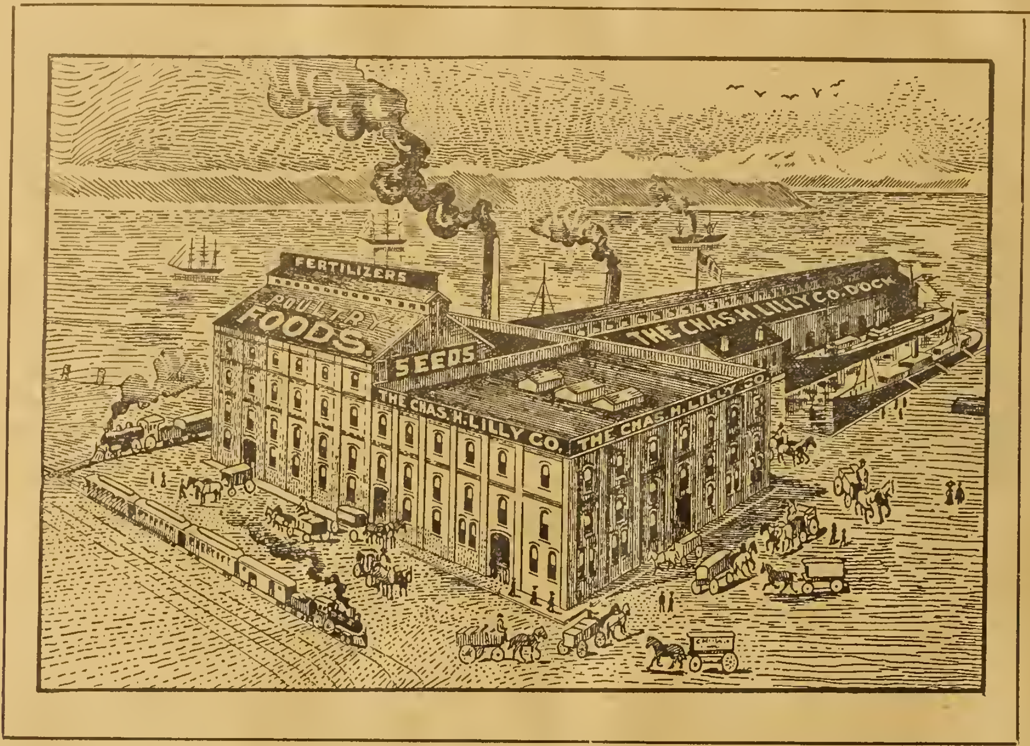
Seed Selection and Handling by Experts

"To sell two seeds where only one was sold before," is the motto of the Chas. H. Lilly Co., of 305 Market St., San Francisco. The position of this firm in the seed world is so unique that it is worthy of special mention.

In the handling, selection and development, of hardy northern grown seeds, this concern has reduced the business to approximately an exact science, with the result that they are able to supply the Farmers and Gardeners of California with every variety of seed with which the fertile soil of the various districts of the State will give growth.

This success has not been brought about without hard work, considerable research and much experimentation. It has required the constant effort of those at the head of this great seed business, for in the beginning there was little to work upon. Everything had to be created. While, on the one hand, the markets were being built up, the seed organizers, on the other hand, were preparing the system which was to supply the market with every variety which was adaptable to this climate—and it was no easy matter. But the work has been accomplished so well that The Chas. H. Lilly Co. is recognized as one of the foremost seed houses of California.

The development of Northern grown seeds has been especially successful. These seeds cost more to raise, sell for more money and give proportionately greater results than do the ordinary seed varieties.


FERTILIZERS
POULTRY FOODS
SEEDS
THE CHAS. H. LILLY CO.
THE CHAS. H. LILLY CO.
THE CHAS. H. LILLY CO. DOCK

The Chas. H. Lilly Co. are the owners of a mammoth plant, located at Seattle, where all seeds are cleaned properly by automatic Clipper Cleaners. The latter have over thirty different sized screens, which permit the handling of all kinds of seeds, small or large, light or heavy.

By the proper arrangement of these screens and the clever device for regulating the air blast, accuracy is gained in the uniform high quality of the seed when cleaned and recleaned ready for the market. Thus all foreign matter and defective seeds are easily removed.

In the seed House at the Plant, there are in all over fifty (50) people, not counting the Salesmen or the Clerical force. Ten expert Seedsmen, each one of whom has had years of experience in his special line of the business, are employed in assorting, cleaning and grading the seeds and in the careful work that is necessary in preparing them for the market. Four floors, with an aggregate space of over 45,000 square feet, are required to accommodate the preparation of "Lilly's Best Northern Grown Seeds."

Following the policy of Eastern firms, The Chas. H. Lilly Co. maintain, in connection with the Plant, a large experimental station where the qualities of the different varieties of seed are thoroughly tested before they are recommended for sale to the people.

One of the best catalogues published in the United States, is issued by The Chas. H. Lilly Co. It is free to all for the asking, and describes minutely some of the best things offered to the lovers of beautiful gardens and to students of Agricultural Economy.

Mr. A. H. Hankerson, is the genial manager, who is always ready to welcome the Company's friends, at 305 Market street, San Francisco, while traveling representatives visit every city, town and village in the State, and so the firm is kept in touch with the needs of the commonwealth. Mr. Lilly and the other officers of the Company are always ready personally to give their attention to such matters as may be entrusted to them.

In closing this article, we wish to call attention to the unexcelled facilities of the mail order division. Here prompt service is the motto, and those living at a distance can depend on the same treatment, as though they were at the store in person. Some of the best mail order men in the West are employed, so The Chas. H. Lilly Co. gives its patrons the best service.

CALIFORNIA POLYTECHNIC SCHOOL.

The State Polytechnic School at San Luis Obispo has engaged Mr. C. W. Rubel of Iowa, to be instructor in the animal and dairy industries. Hitherto, Director Leroy Anderson has been giving instruction in these subjects, but the administrative and other duties are becoming so exacting that he cannot devote sufficient time to these important subjects. Mr. Rubel is a graduate of the Iowa Agricultural College at Ames, in the class of 1904. For a year after graduation he held the fellowship in animal industry and assisted in teaching in this department. When it is understood that the Iowa State College has the largest equipment of livestock of any school in the country and possesses representatives of more than twenty-five different breeds, in addition to many animals of purely market classes, it will be seen that Mr. Rubel's opportunity for study has been the best. Much good will acrue to the school and to the state by his service. It is hoped that agricultural societies may call upon him to judge their livestock. He has already entered upon his duties at San Luis Obispo.

The Polytechnic School has just received three head of dairy Shorthorn yearlings from Iowa selected by Prof. C. T. Curtiss of the Agricultural College of that state. They are very promising young things—are registered and of excellent breeding. The dam of the bull in a recent test begun 210 days after calving produced ten pounds of butter in seven days. This is a good test considering that almost up to the time of the beginning, the cow was nursing her calf. In purchasing these Shorthorn the school hopes to test their dairy qualities in comparison with dairy breeds and to furnish stock for improving other herds. This type of animal is more popular than any other in the dairy farms of the coast section of our state and the advent of these well-bred animals is hailed with pleasure. We congratulate the school upon its interest in helping the dairy and stock industries so materially.

A GRAND SCHEME.

If it should be found practicable to store the mountain floods, especially during the season of heavy rains, not only can millions of acres of desert Western lands be made to blossom, but the states of the Mississippi Valley can be saved from the disastrous results of excessive floods. The movement is highly commendable.

Don't wait until tomorrow—it never comes.

Queries and Suggestions

BEST EARLY GRAPES FOR BRAWLEY.

Editor Cultivator: What is considered most popular and profitable for an early table grape to plant in this section?—J. W. H. Brawley.

Malaga is considered the best early table grape for your section. It has stood the test better than any variety over the largest section in the desert country. Black Hamburg has given good returns at Coachella, but the best reports are given of the Malaga.

ALSO IMPERIAL.

"Imperial" wants to know how Malaga, Black Hamburg, Muscat and Tokay will do in the Imperial Valley.

The two first named have done well on the desert, especially Malaga. Muscat cannot be recommended on account of its scant foliage, which renders the fruit liable to sunburn. This has been complained of on the "inside" even, some seasons, likewise Tokay. It is not a good shipper as the berries get loose around the stems which causes the fruit to spoil quickly, and also makes a mussy looking bunch. Tokay is still more tender and cannot be recommended for your section. It has been tried and found wanting in the Coachella district.

There has been started at the Mecca Date Garden, a large collection of table grapes and within the next two or three years there will be some valuable results determined which will be just what desert grape growers will need.

Put In New Pipe.

Editor Cultivator: I have "run up against" another problem that I fail to be able to solve. I have a pipe in my well for the purpose of pumping water. The pipe (I am sorry to say) is common black pipe, vice galvanized which I should have put therein. The water, as a natural consequence, tastes of the pipe. Now, the question is, what shall I do to prevent the water tasting of the pipe? Will it help matters any to take the black pipe out and put in its place galvanized pipe?

I have thought of several remedies, but in most of the changes the benefit might not be sufficient, so would like some idea from you.—A. B. G., Ukiah.

You had better take out the old pipe and put in new. Galvanized pipe will serve your purpose doubtless as well as a more costly kind, and last about as long.

Bad Digestion.

Editor Cultivator: We have a cow whose milk at times is stringy and lumpy. Her udder swells, becomes feverish and hard, followed by the condition of the milk above described. What shall I do?—Mrs. E. P., Riverside.

This trouble is often due to derangement of the digestive system, and sometimes to cold and changes in temperature. Give desert spoonful of nitrate potassium once or twice a day when affected or coming on.

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GASOLINE AND DISTILLATE
ENGINES
STAND
EVERY
TEST

PRICES— 2½ Horse Power, $125 00
4 " " 185.00
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NOTE—After July 1, 1905, above prices take precedence over all previous lists.

M. C. TUNISON
1000 N. Main St. - Los Angeles, Cal.

Care of the Calf.

Editor: Will you kindly answer one question for me, which may be also important to others?

I have a calf from a fine cow and Whitting's bull, which is the best stock I can get. The calf is two weeks old and nearly ready to take away from its milk. What shall I feed it to bring the best results?

If you intend to take the calf from the cow you will have to exercise care at this time lest you produce unfavorable conditions in the calf. Feed warm cow's milk three times a day, about three pints at each meal for a month, now and then giving the calf a raw egg broken in the mouth so that the shell goes into the stomach. Do not over feed, but keep the calf always hungry enough for its meals. As soon as it can run on grass let it have a short feed daily, being careful not to allow it to eat so much as to produce diahorrea.

Moving Cattle.—Will you kindly let me know through the colums of your valuable paper the law respecting the shipping of cattle into Tulare County from Southern California? In doing so you will oblige a number of your subscribers, myself among the number.—W. A. W., Santa Ana.

Cattle can be shipped north during the months of November, December, and January by getting a certificate from either the State Veternarian, assistant state, or Government Inspector Hill.

TO PRESERVE EGGS.

Editor Cultivator: Please give me the best method of keeping eggs for a period of six or eight months. How do refrigerated eggs keep?—M .M. S., Santa Rosa.

Answer: The best method of preserving eggs has been found to be to keep them in cold storage at a temperature of about 45 degrees. They will keep good a reasonable length of time after being taken out of storage, but high temperature is harmful to all eggs, even fresh ones, and would be more so to those taken from a cold storage warehouse.

Since the cold-storage method is not available to many communities, it might be well to mention another method of preserving eggs that has been quite successful; viz., the water-glass method. Water-glass is silicate of soda or silicate of potash, the former being the cheaper. It is not expensive. If wooden kegs or barrels are used in which to pack eggs, they should first be thoroughly scalded with boiling water to sweeten and purify them. To each ten quarts of water, which should first be boiled and then cooled, add one quart of water-glass. Pack the eggs in the vessel and pour the solution over them, covering them completely. A cover should be placed on the vessel, making it air-tight if possible. If left uncovered, the solution turns into a jelly-like substance, and is apt to evaporate and leave some of the eggs exposed to the air. Keep the eggs in a cool, dark place. A dry, cool cellar is a good place. If the eggs are kept in a place that is too warm, the silicate is deposited and the eggs are not properly protected. Do not wash the eggs before packing, for by so doing you injure their keeping qualities.

Only perfectly fresh eggs should be used, for nothing will prevent a bad egg from getting worse, and such an egg will prove harmful to the good ones that may come in contact with it.

Eggs packed by the above method have been known to keep for fifteen months. The only trouble has been that when they are boiled the shells crack. All packed eggs contain a little gas and, when boiling, not finding a ready escape, bursts the shell. This may be prevented by making a pin-hole in the blunt end of the egg. To do this, hold the egg in the hand, place the point of a pin against the shell of the egg and give the pin a quick, sharp blow, just enough to drive the pin through the shell, but without further injury to it. For frying and other methods of cooking, where you first break the shell yourself, the eggs are all right.

DON'T TAKE A CHANCE

ARMOUR'S BLOOD BONE AND SINEW FERTILIZERS

with *cheap* fertilizers. Remember the analysis doesn't tell the whole story. Cheap materials, coarsely ground, careless mixing, poor mechanical condition show up in the orchard after your money and time are gone.

Get Behind the Shield

of fertilizer protection offered you in the **ARMOUR** trade-mark and buy the highest-grade animal products at first hand.

THE ARMOUR FERTILIZER WORKS
736 Hellman Building, Los Angeles—Factory, Colton, Cal.

Mulberry Trees

Six varieties for Silk Producing and Fruit Berries. Special attention is called to the Morus Nigra, a Persian variety especially for fruit. Also to the Japanese Mulberry, a variety generally used for silk culture.

I am also prepared this year to furnish 10,000 Rooted Grape Vines, following varieties: Flaming Tokay, Black Malvoise, Black Prince, Cornichon, Sable Kanski and Muscat. I have also some very fine Orange Quince Trees and Pomegranates. Send for descriptive circular free by mail.

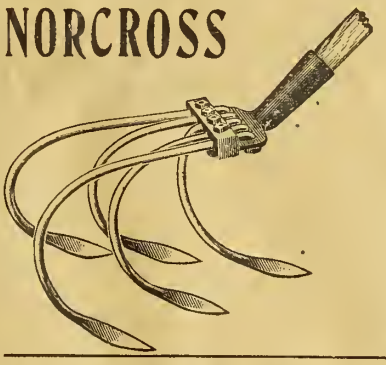
R. P. LAWSON, 252 No. Avenue 21, Los Angeles, Cal.

A Sharp Razor
Makes Shaving Easy

It is a pleasure to shave when your razor is sharp. With "Every Man's Dry Hone" you can give your razor a keen cutting edge with a few strokes. It is a perfect hone, made for home use, and guaranteed to give satisfaction or money refunded. No water or oil necessary—self lubricating. Always ready.

Mailed on receipt of $1.00. Send in your order now, while you are thinking about it. Be ready for your next shave.

REDLANDS HONE CO. 70 Orange St., Redlands, Cal.



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An Adjustable Garden Cultivator or Spring Tooth Hoe,

One of the most perfect tools for the cultivation of all kinds of garden plants ever offered the public.

OVER 100,000 IN USE.

It retails at $1.50 and is worth that price every day used in ONIONS, STRAWBERRIES, and other small plants.

It is adjustable in width by sliding the top plate.

It will work between rows or center blade can be removed and straddle row.

If not at dealers sample tool will be sent on receipt of price.

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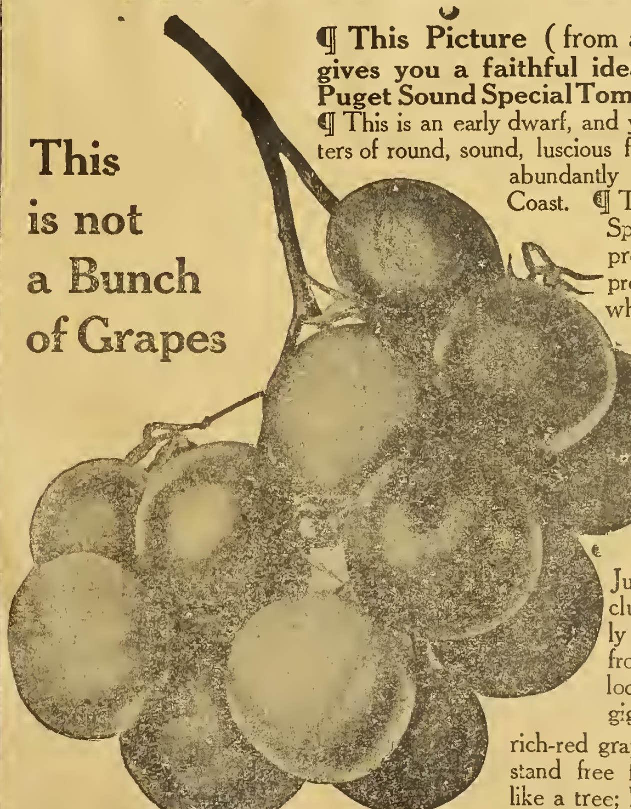

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POOR LITTLE JOE.

Early in the morning he rises,
  And out of doors he must go;
Then out in the cold to milk
  Is the duty of poor little Joe.

When he feeds the cow to milk her
  And asks her politely to "soe!"
Almost before he knows it,
  She hauls out and kicks little Joe.

And there is the pig and the chickens
  And the turkeys to feed and Oh!
So awful many other things
To be done by poor little Joe.

And when his chores are done
  To school he must surely go,
And he is most always late,
  Then the teacher is angry with Joe.

He has no time to study at home
  And he misses his lessons, so,
At recess the boy that is kept in
  Is nobody but poor little Joe.

Now this is all of the trials
  Of this little boy I know,
Now, aren't you sorry, Aunty and Cousins,
  All sorry for poor little Joe?
  —Elmer Wheeler in Farm Journal.

Into Custody

From An Old Legend.

It is Christmas eve, and the snow lies deep upon the ground at Valley Forge. From the little cottage of old Michael Kuch a light shines cheerfully out across the wintry scene. Inside, he and his daughter Kate are sitting by the cosy log fire. The time passes. The big clock in the corner of the room strikes twelve and the old man and his daughter arise from their chairs and offer their evening prayer.

Michael Kuch prays for the safety of his only son, Albert, who is a trooper with Washington's army.

Barely have they arisen from their knees when the door of the room is burst suddenly in, and a panting, wild-eyed man stands before them. He is trembling from head to foot, as he hurriedly closes the door and sinks into a chair.

Father and daughter hasten over to him. "What is? What is it, John?" cries the girl, in great alarm, for the man is her betrothed.

"I shot at him—at the rebel, Washington. I shot at him, but missed—and killed one of his attendants," stammers the fugitive. "His men are on my track; give me shelter; let me hide," he implores.

Old Michael Kuch looks hard at the young man.

"I killed one, but not Washington; not the rebel chief; 'twas him I aimed at."

"'Twas a coward's act," condemned the old man. "Thou knowest that I am a neutral in this war, John Blake, though my boy be in yonder camp. I will not raise my hand against my king, but if I did, it would be in open war, not like a cowardly assassin, from some hiding place."

"Give me shelter; let me hide," implores the fugitive frantically; "I hear them, they are coming!"

The scrunching of horses' hoofs and the tramp of men's feet are heard in the snow outside.

"Quick!" cries the assassin, "or I am lost."

"Out here, then—to the spring-house, but remember, John, 'tis for my girl's sake, not thine; I despise an assassin."

Michael hustles the fugitive out at a rear door, and runs with him to the spring house. Then he hurries back to the house. As he enters again, the front door is flung wide open and a crowd of men in the blue and buff rush in.

"A murderer has come this way!" shouts a sergeant. "He killed one of our dragoons. We want him; where is he. Give him up, old man, or 'twill be the worse for thee."

"He is not in this house," calmly says Michael Kuch.

"But he came here; we tracked him in the snow."

"If ye tracked him, find him."

"He is here; give him up," cry the soldiers, gathering around the old man with threatening gestures.

Kate flings herself between them.

"What he says is true; only my father and I are in this house," she cries.

"Stand aside, girl. We are going to take this assassin. We know he is here—Out of the way, old man!"

At this moment the door of the room swings gently open and a tall, dignified-looking man in a general's uniform steps in. He carries in his arms the limp form of a dragoon, whose breast is dyed with blood.

"The General!" cry several of the soldiers, springing to attention.

"Washington," mutters old Michael Kuch to himself.

The officer lays the form of the man reverently on the little couch at the furthest side of the room, and then turns toward his men. As he moves, the light from the leaping flames falls for a moment on the fallen soldier and lights up his white features. Old Michael suddenly starts forward, and then falls on his knees at the side of the couch.

"My son! my son!" he cries, "he has killed him."

Then in mad haste, he leaps to his feet and dashes from the room.

Next moment he is at the spring-house.

His life shall pay for it," he mutters hoarsely to himself, as he faces the concealed man.

He draws his pistol and fires full at him, but quick as he is, the girl, who has followed him, is quicker. She dashes the weapon up with her hand, and the ball goes wide.

"He is mine!" she pants. "You shall not kill him!"

The soldiers have followed them from the room, and they drag the skulking assassin from his place of concealment. He is brought into the room, and faces the general.

"What harm have thy countrymen ever done thee, that thou should'st murder them?" asks Washington, with great severity.

"The ball was meant for thee; kill me," says the prisoner defiantly.

There is a stirring of the form on the couch, and one word, "Father," comes from the lips.

The dragoon is not dead.

His father and General Washington bend over him. They examine his wound.

"'Tis not fatal; he may live," says the leader, calmly. Then, turning toward the would-be assassin, he speaks in slow, measured tones:

"You are not yet fit to die. I will put you under guard until you are wanted."

Then, bowing to Kate, he continues, "Take him into your custody, my dear young lady, and see if you cannot make an American of him."

The clock strikes one.

And turning from the room, he leads his men away.

* * * *

Six months later two dragoons are fighting side by side in the Continental Army. They are Albert Kuch and John Blake.

COLDS, THEIR CAUSE, AND REMEDIES.

What is commonly termed a cold, or in more severe case influenza, is caused by a clogging of the pores of the skin, usually from a chill, and the waste matter that should pass off through the pores seek other avenues of escape and causes inflamation of the mucous membranes, inflamed or sore throat and congestion or inflamation of the lungs.

For the relief of these unpleasant and often distressing symptoms, open at once every avenue of waste, the pores by a warm bath, or the old-fashioned "good sweat," and as the largest pores of the body are in the soles of the feet, our grandmother's recommendation to "soak your feet" should be followed. If the bowels do not move freely move them, preferably with an enema or bowel injection of warm water, and increase the action of the kidneys by drinking all the water posible. By taking this treatment upon the first symptoms of a cold, it may usually be broken up. But if inflammation has set in strongly it will be a day or longer before the mucous membranes can throw off the waste that has been thrust upon them.

Should a feverish state be added to the other symptoms one should remain indoors in warm, but well ventilated rooms, of an equable temperature, or at least protected from draughts, until the fever subsides.

When there is no fever, out-of-door exercise will greatly expedite the cure. Deep breathing of pure air will assist as nothing else can in clearing the inflamed membranes and air passages, and also by purifying the blood as it passes continuously through the heart and lung cells for that purpose.

From the cause and the remedies suggested preventive measures should suggest themselves. If the skin is kept perfectly clean by frequent bathing, the pores will not become clogged; if the bowels move freely and regularly, there will be no demand for another outlet for the wastes of which they should dispose, and the same is true of the kidneys. And if accustomed to taking out-of-door exercise daily there will be little danger of becoming chilled.

Proper diet is necessary also, for if food is eaten that contains little or no nourishment for the body it simply clogs the digestive tract and all the organs are overworked to dispose of the additional waste.

Only as much food should be taken, and of such kind, as is necessary to sustain the body properly—to build up anew the tissues that are being constantly worn away. When this lesson is learned the human family will enjoy much better health and longer life, because the body will not be weakened or so soon worn out as when thus overtasked. When we eat to live instead of living to eat, we will not be constantly seeking something to pamper unnatural appetites, nor searching the cook's pantry for dainties to please a cloyed palate, regardless of its effect upon the digestive machinery and our health.

A simple diet of cereals, milk, fruits and vegetables, eaten with as little preparation as possible, is most conducive to health and longevity.

But to return to the subject of colds, whose unpleasant symptoms may also be relieved by local treatment with home remedies.

Hot herb teas of sage and pennyroyal, and also ginger tea, will help to bring on the perspiration that will freely open the pores.

For sore throat apply a cold compress—a cloth wrung out of very cold water, folded three or four times, placed over the throat and held there by being pinned to a close covering of flannel of two or three thicknesses, which should extend around the neck and be securely fastened with a safety pin, and also pinned to the clothing to hold it in place. Gargle the throat well with a solution of chlorate of potash, or if that is not at hand, with borax water or strong salt water. But chlorate of potash should be kept on hand for the purpose.

If there is a tight feeling or soreness in the chest, it is a symptom of inflammation, and a cold compress should be placed there also. Should this fail to relieve, try a mustard plaster, made by stirring equal parts of corn meal and mustard into the white of an egg to form a paste, which spread on half of a piece of old or thin white muslin, turn the other half over it, place on the chest and cover with two thicknesses of flannel. Keep this on until it burns unpleasantly, then remove the plaster, rub the skin with cold cream or vaseline and put a piece of clean muslin under the flannel.

When catarrh is present leave a piece of alum on the top of a hot stove until it dries out into a white mass, then powder it and use as a snuff. Also snuff up the nose occasionally a solution of salt and water, strong enough to be felt but not to smart unpleasantly. This is more efficacious taken as a nasal douche.

Cough mixtures are of no help, as they so quickly pass by the affected parts into the stomach, and syrups of any kind are an injury, adding to the waste the body is trying to throw off.

A swallow or two of quite strong salt and water will often stop the cough of a child in the night, probably because of the coming up towards the throat of worms from the stomach, with which children are often troubled and which the salt water drives back.
—Farm and Home.

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Cookery Recipes

Here is a recipe for making a delicious black fruit cake: Cream together two pounds each of butter and brown sugar, add the yolks of twenty-four eggs, beat thoroughly and stir in one pint of unfermented wine. Seed eight pounds of raisins and cut them in halves; add to them four pounds of cleaned currants, two pounds of shredded citron, and mix thoroughly with one cupful of flour. Two pounds of flour should be measured and sifted for the cake, and the cupful mixed with the fruit should come from this. With the remainder of the flour mix thoroughly two ounces of grated nutmeg and two teaspoonfuls of cloves. Stir the fruit thoroughly into the butter and sugar mixture, and then add alternately the stiffly-whipped whites of the eggs and the remainder of the flour. Add a little molasses to make it a little more moist and black. This quantity of ingredients will make two very large loaves baked in tin pans.

* * *

PENOCHE.

Melt up two cups light brown sugar with one-half cup milk, and stir all the time over the fire until it will form a soft ball in the water. Add butter the size of half an egg, beat up briskly until it cools and begins to thicken, then turn out in buttered plate, and cut with a knife into pieces of size desired before it is quite cold. Adding about two tablespoons of grated chocolate, or a half cup of chopped nuts makes a fine candy also.

* * *

PEANUT BRITTLE.

Stir two cups sugar in a frying pan over the fire until it melts and boils up well, then add two-thirds cup coarsely chopped peanuts and cool on a buttered plate, cutting in squares before it gets too cold, or it may be broken up afterwards.

* * *

CHOCOLATE FUDGE.

Grate or cut off with a knife about two squares from a cake of chocolate, melt it up with two heaping cups granulated sugar and one milk and boil until it forms a soft ball in water. Add butter size of walnut, heat until it begins to thicken and cool on buttered plates, cutting before it is quite cold. Chopped nuts greatly improves this.

HOMELY HINTS.

Colic—Colic is one of the most annoying ailments with which small children are afflicted. No one is ever alarmed about it, but the pains distress the little one and cause cries, which worry the mother and disturb other members of the family. The difficulty is that gas accumulates in the stomach and bowels, which distend the organs and the pains are distressing. If this gas can be removed the child is immediately relieved. An old-fashioned nurse says that she used a safoitida in such cases. She dissolved a small quantity of the drug in a teaspoon of hot water and when it cooled sufficiently, gave it to the child. The gas would soon be belched up and the child relieved, would fall asleep.

* * *

Cleaning the Hair—Many find it difficult to wash their hair during the winter without catching cold. In such cases the hair and scalp may be cleaned with corn meal. First loosen up the hair, then take a small handful of cornmeal and rub it thoroughly on the scalp. After the scalp has been covered with it, the hair itself may be rubbed with it between the hands. The greater portion of the corn meal may be shaken out and the remainder is easily brushed out. This method is a satisfaction to those who fear to wet the hair during cold weather and also to those having heavy hair which is hard to dry.

* * *

Patching—As soon as garments show weak places, put a patch under before the cloth is worn through. It is thus much easier to get the patch to fit, and the garment looks neater than when the patch is allowed to show.

THE MISUNDERSTOOD GIRL.

She is to be found everywhere, in all classes of society—and to recognize her is to avoid her. Nothing is more fatal to the peace and happiness of a community or household than to count a "misunderstood" girl among its members. As a rule they are not misunderstood at all, but, on the contrary, are understood far too well, for they are taken at the valuation of the many, which is more likely to be true than that which is set by the individual herself upon her own character.

A misunderstood girl is often a selfish, always a foolish, girl; for if she is clever she will soon discover the reason why she is not a domestic success.

In some instances we are really misjudged, in the same way as we often misjudge others. But, as a broad rule, the judgment formed by the world—or rather that small portion of it in which we live—is more often the true one.

"Nobody loves me at home; they don't understand me," the "misunderstood" girl will say, with a melancholy smile, and thinks herself well deserving of the pity and sympathy of her friends. But is she?

You are filled, perhaps, with the desire of improving your own mind; you love the study of poetry, art or literature, and you are extremely ruffled when your sister begs you to assist her in retrimming an old dress, or to take the younger children out for a walk. Don't you think you could put down your book with a good grace, help your sister and at the same time interest and amuse her with an account of your reading?

One day you are keenly interested and excited over an article in a magazine, where your own ideas are brought out in powerful language. You rush down like an avalanche and pour forth a volume of talk upon the head of your favorite brother who has just come home tired from a hard day's work, and then you are angry and hurt that he takes no interest in the subject and wonders what on earth you are excited about.

The truth is you are not misunderstood—you are incorrigibly selfish.—Woman's Life.

STAND UPRIGHT.

There are many things in the lives of women which tend to develop the carriage of the body anything but upright. If a girl has any pride in being upright in body as well as in morals, she can, even if she has an occupation which tends to make her crooked, do much herself to prevent it. In the first place, carefully cultivate the sense which tells her when she is standing straight and when she is not. By paying attention to this muscular sense it becomes in time very acute. By neglecting it, the sense becomes dull—is paralyzed. Cultivate it daily for several times a day by assuming the upright attitude. Stand before the glass and see when you are straight, or get a friend to tell you, and then put yourself in this attitude whenever you stand or walk or sit at any labor in which you are engaged. If you have only to walk across the room, do it in an upright attitude. If you have only to stand and converse with a friend in the street, on the road, at a party, get yourself so accustomed to the upright habit that you will feel uncomfortable in any other way. In time an upright habit will be established, and constant attention to it will not be required.—Dietetic Gazette.

Bobby (to his stout uncle)—Gee! Uncle, couldn't a fellow have a fine Christmas dinner if he was as hungry as me an' as roomy as you?"—Brooklyn Life.

ACCEPTED.

A colored fellow at Wellington, says Harry Woods, was smitten by a dusky maiden, and, not having the courage to propose face to face, called her up over the telephone. When he got the proper party on the line he asked: "Is dat Miss Johnsing?" "Ya-as."

"Well, Miss Johnsing, I've got a most important message to ask you."

"Ya-as."

"Will you marry me?"

"Ya-as. Who is it, please?"

Willie—"Mamma, I dreamed last night that papa gave me a bicycle for Christmas and you gave me a watch."

Mamma—"But, Willie, you know dreams go by contraries."

Willie—"Then you will give me the bicycle and papa the watch?"—Town and Country.

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Woman's Breast and Man's Lips

Most Common Places for Cancer

[San Francisco, Cal., Dec. '05]

The papers made mention a short time ago of people cured of Cancers without knife or pain by Dr. and Mrs. Dr. Chamley & Co. Since that time the cures of so many prominent people have been the occasion of great comment.

They all said their cures were marvelous beyond expression, many of them having been given up to die. They first obtained the Doctor's free book, which teaches that any lump in woman's breast is Cancer, it led to, as they say, the greatest blessing of their lives.

All the leading newspapers and medical journals of the world have noted their success and wonderful cures. They charge nothing until cured.

It is said they have cured more Cancers than any doctor living. No X Ray or other swindle. They probably have the best 50-cent book ever printed on Cancers and Tumors, sent free only to those who describe their case. Their address is 25 Third St., San Francisco, Cal.

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Los Angeles, Cal.

Los Angeles Markets.

Los Angeles, Jan. 4, 1906.

The continued cool, dry weather has hardened prices all along the line, especially butter and vegetables. Eggs have declined since last week, but they are expected to again advance unless warmer weather intervenes. Poultry is scarce and eagerly taken. Butter is from 2 to 3 cents above last week's quotations, and unless rain comes soon, another rise is predicted. The continued heavy frosts, while apparently doing little damage to fruits, has proved injurious to vegetables and prices are up on all varieties.

Butter.

B. of T. Creamery, per roll	.70
Valley Creamery, fancy	67½@70
Valley Storage	.60
Fancy Dairy	.55
Cooking	.20@22

Cheese.

Cal. 3-℔ hand	19½
Cal. Young America	18½
California Anchor	17½
Northern	16@17
Domestic Swiss	18
Imported do	28

Eggs.

Eggs, Fresh Ranch	33
Eastern and Storage	27@28
Seconds	21

Poultry.

Fryers, 2½ ℔s	14
Broilers, under 2 ℔s.. per ℔	16
Young Roosters, per ℔	14
Hens, per ℔	14
Ducks, per ℔	13
Geese	13
Turkeys	22@23

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock:

Hogs, 200 ℔s, per cwt	5.75
Prime Steers, cwt	3.50
Cows, cwt	2.85
Calves, cwt	4.50
Sheep, ewes, per head	4.00
Lambs, do	3.25
Wethers, per head	4.50

Potatoes.

Northern, per sack	$1.50@1.75
Locals, per cwt	1.10@1.25
Sweets, white, per cwt	1.00
Sweets, yellow	1.25

Vegetables.

Onions, Silver Skins, cwt	1.75@2.00
Onions, yellow, cwt	1.75
Garlic	6@8
Cabbage, per sack	40@50
Cauliflower, per doz	25@30
Bell Peppers	4@5
Wax Beans	8@9
String Beans	8@10
Cucumbers, per box	1.00
Beets	40
Green Onions, doz bunches	20@25
Carrots, doz. bunches	25@30
Turnips, doz. bunches	25@40
Celery, per doz	32@35
Peas, per lb	8@10
Egg Plant	5@10
Chili Peppers, green	3½@4
Chili Peppers, dry	15@20
Tomatoes, local	50@75
Parsley, per doz. bunches	40@50
Summer Squash, bx 20 ℔s	40@50
Rhubarb, per box	40

Citrus Fruits.

Lemons, Standard	1.50
Lemons, Choice	2.00@2.25
Lemons, fancy	3.00
Grapefruit	2.50@2.75
Seedless	3.00
Navels	1.45@2.00

Fresh Fruits.

Apples, Bellefleur	1.25@1.65
Fall Pippins	2.00@2.50
Apples, W. W. Pearmain	1.25@1.50
Strawberries, per crate	3.00@3.50
Raspberries	20
Guavas, per basket	4
Persimmons	5@10
Muscats	90@1.75
Tokays	1.35@1.75
Red Emperors, per lb	8
Pears, Winter Nellis, per lb	3½@4½
Casaba Melons, large crates	2.25½2.50

Dried Fruit.

Apples, evaporated, ex ch, 9c; ch, 8½.

Apricots, ex ch, 11; fy 8½; ch, 7½.

Peaches, fy, 8½@10½; ch, 7½@8.

Santa Clara Prunes, 30-40, 8c; 40-50, 7c; 50-60, 6c; 60-70, 5½c.

Loose Muscatel Raisins, 2-crown 5; 3-crown, 7½; 4-crown, 8.

Beans, Dried.

Limas	5.00@5.50
Pinks, fancy	2.50@2.60
Lady Washington	3.00@3.10
Small White	3.50@3.75
Black Eyes	5.50@6.00

Nuts.

Walnuts, No. 1, soft shell	14½
Do, No. 2	8@10
Do. No. 1, hard shells	12
Do. No. 2, hard shells	10
Almonds, paper shell	15½@16
Almonds, soft shell	14
Peanuts, California	6½

Honey.

Honey, comb frames	16@16½
White, strained, per lb	5½
Amber	5
Beeswax	27

Hay.

Barley	12@16
Alfalfa, local	13@13.50
Alfalfa, Northern	11@12.50
Wheat	13.50@14.50
Tame Oat	11@20

Grain.

Selling prices of mill stuffs f. o. b. cars L. A., in quantity, are:

Rolled Barley	1.15
Bran	1.30
Feed Corn Meal	1.55
Shorts	1.45
Wheat, per cwt	65@1.70
Cracked Corn	1.50
Oil Cake Meal	2.10
Cocoanut Meal	1.55

San Luis Obispo County Lands. Best and Cheapest in the State. Rainfall abundant. Colony Lots, Farms, Orchards, Stock Ranches, Town Lots, Business Openings, Mines. Offices opposite R. R. Depots, Oceano and Arroyo Grande, Cal. Call or write for price list.—Beckett Realty Co.

The Father—"So your ambition is to become an actor, eh?"
The Son—"Yes, dad."
The Father—"All right, young man. It's up to you to begin by cultivating the art of walking and fasting.—Cleveland Daily News.

San Francisco Markets.

San Francisco, Jan. 3, 1906.

Butter.

No important changes concerning either prices for the various grades of butter or the tone of the market were noted yesterday, and general business was restricted mainly to the filling of routine needs.

Fresh California extras	31
Fresh California, firsts	28
Fresh California, seconds	23½
Eastern extras	25½
Storage, California, extras	25

Cheese.

California, new	14¼
California firsts	13½
California seconds	12½
Eastern, Cheddars	15½
Storage, California	13½
Storage, Eastern	15

Eggs.

Selected Ranch Eggs were again in short supply yesterday and, under a buoyant demand, the market developed a firmer tone.

Eggs, fresh ranch	36
Firsts	34
Seconds	28
California Storage	28½
Seconds	23½

Poultry.

Since the opening of the week, four carloads of Eastern Poultry have arrived, one of which went direct to a retailer, while the others were placed on the open market and sold well. Local stock was in light receipt.

Old Roosters, per doz	$5.00@6.00
Young Roosters, per doz	6.50@7.50
Hens, per doz	5.00@7.50
Ducks, per doz	5.00@8.00
Turkeys, per lb	22@23
Geese, per pair	2.00@2.50

Live Stock.

Strong markets prevail for Live Stock offerings and operators report a spirited trade passing in all departments at full quotations, though prices remain the same as a week ago.

Hogs, per lb., 80 to 130 lbs	5@6
Hogs, per ℔., 130 to 250 ℔s	6c.
Hogs, per ℔., 250 to 350 ℔s	5½c.
Hogs, per ℔., rough heavy	3½@4½c.
Prime Steers, lb	7@7½
Cows, ℔	5@5½
Calves, ℔	4½@5
Sheep, ewes, per lb	4@4½
Lambs, per head	5.00@5.50
Wethers, per lb	4½@5

Potatoes.

River Burbanks	50@85
Oregon Burbanks	85@1.10
Salinas Burbanks	1.10@1.40
Sweets, Merced	75@1.25

Vegetables.

Onions, yellow, per sack	1.10@1.35
Bell Peppers	12½@15
Chili Peppers	6@7
Cucumbers, per doz	60@1.00
Tomatoes, per box	90@1.00
String Beans	12½@15
Wax Beans	12½@15
Egg Plant, per crate	2.50
Summer Squash, per box	85@1.25
Green Peas, per lb	10@12½

Citrus Fruits.

Navels, fancy	2.00@2.50
Seedlings	75@1.25
Lemons, standard	1.50@3.00
Limes	5.00
Grapefruit	1.50@2.75
Tangerines	1.00@1.25

Fresh Fruits.

Yesterday's market for Fruits was barren of any special or important features.

Apples, per box, extra	1.75@2.00
Apples, fancy	$1.25@1.50
Cranberries, per bbl	15@16
Grapes, per box or crate	1.00@1.25
Pears, per box, Winter Nellis	2.00@2.50

Beans, Dried.

Limas	4.75@4.90
Pinks	2.00@2.15
Small Whites	3.15@3.25
Black Eyes	4.50@4.75
Bayos	3.50@3.75
Red Kidney	$3.25@3.75
Horse Beans	$1.25@1.85

Hay.

Barley, new	$8.00@11.00
Alfalfa	7.50@12.50
Wheat	11.00@16.50
Oats	9.00@13.50

Grain.

Wheat	$1.33½@1.36¾
Barley	1.18@1.22
Corn	1.37½
Oats	1.50@1.65
Rye	1.45@1.52
Rolled Barley, per ton	$26@27.50
Bran, per ton	19.50@20.00
Feed Corn Meal, per ton	29.50@30.50
Middlings ½	26@30
Cracked Corn, per ton	30@31
Oil Cake Meal, per ton	37.00
Cocoanut Cake, per ton	22.00

Hops.

Grades	8@11

CITRUS MARKETS

New York, Jan. 2.—Twenty-nine cars sold at today's auction. Market lower. Weather favorable.

NAVELS.

	Averages.
Circle City, or Elmore Deane	$1.60
Flower, ch, F. P. Corson, Ontario	2.00
Rialto Girl, fv, F. P. Carson	2.00
Flower, fy, F. P. Carson, Ontario	2.05
Golden Gate, ex, Red. G.O.A.	2.15
Golden Flower, xf, Red. G.O.A.	2.30
Golden Gate, xc, Red. O. A.	2.55
Oak Leaf, ch, T.C.C. Fr. Ex.	2.00
Tulip, xc, Red. F.O.A	2.15
Iroquis, xc, Red. F. O. A.	2.05
Tahoe, xf, Red, F. O. A.	2.20
Camellia, xf, CCU Redlands	2.25
Hollywreath, fy, CCU Lindsay	2.15
Mistletoe, ch, CCU Sanger	1.85
Poinsetta, fy, CCU Riverside	2.00
Rough Rided, fy, CCU Palmero	1.85
Trophy, xf, CCU Higland	2.25
Independent, fy, Highland	2.15
West Highland, xc, Highland	2.20
Carnation, xc, Moulton & Greene	2.20
Gypsy Queen, xf, Moulton & G.	2.25
Independent, fy, Highland	2.25
Sunset	2.25
Signal, xf, Stuart Fr. Co.	2.30
Rose, xf, Red. O. G. A.	2.30
West Highland Brand, fy	2.30
Ocean, fy, Moffatt Ft. Co.	2.35
Independent, fy, Highland	2.45
Goldbuckle, xf, S. B. Co. Fr. Ex.	2.40

THOMPSON IMPROVED NAVEL

La France, ch, J. S. Kuns Fr. Co	2.00

FOR SALE

One Holt 65 H. P. Agricultural traction engine, with extra wide wheel base, with water wagon, plow cart, and all necessary attachments.

One Holt Junior Combined Steam Harvester, fully equipped.

Six Stockton Five-Gang Plows, Disc, Seeder, etc.

All in thorough repair, and used but two seasons; for sale on account of lands being subdivided, and sold off by the Chino Land and Water Company.

Chino Land and Water Co.,
20 Trust Building
2nd and Spring Sts., Los Angeles

ARIZONA NAVELS

Full boxes averaged $3.85; halves averaged $2.25.

LEMONS,

Silver, xf, Arl. Hgts. F. Co.	3.10
Squirrel, fy, A. H. Fr. Co.	2.35
West Highland, fy	2.10

BOSTON MARKET.

Boston, Jan. 2.—Five cars sold at auction. Market weak. Weather fine and pleasant.

NAVELS.

Camellia, xf, CCU Redlands	2.45
Victory, xc, CCU Fullerton	1.60
Rose, xc, Red O. G. A.	2.50
Hollywreath, fy, CCU Lindsay	2.35

PHILADELPHIA MARKET.

Philadelphia, Jan. 2.—Eight cars sold today. Think the market will be higher. Weather favorable.

NAVELS.

Goddess of Fruit, xf, S. A. Ex.	1.95
Goddess of Fruit, xf, S. A. Ex.	2.05
Pride of Cal., st, S. J. L. Co.	2.05
La Paloma, xc, S. J. L. Co.	2.30
Forget-me-not, fy, T.C.C.F. Ex.	2.60
Royal Knight, xf, S. B. Co. F. Ex	2.50
Lion Head, xf, I. L. Lyon & Son	2.50
Grant Choice	1.80
Grant Standards	1.80

LEMONS.

Lomas, ch, Limoneira Co.	2.20
Selected, fy, Limoneira Co.	2.30

HOW TO GROW ORANGES.

R. M. Teague, the San Dimas nurseryman, is out with an attractive booklet entitled "How to Grow Oranges," which has a fund of information which makes it well worth sending for. It also has information regarding the trees to be had at Mr. Teague's nurseries, the varieties of buds, the roots or foundation stock, conditions of planting, care, etc.

Mr. Teagae recently informed the writer that he has this year a fine lot of trees in all varieties, and of the very finest condition. Some as fine as ever set at remarkably low prices. It goes without saying, however, that the price will not be as low as last year.

Much of desirable stock has already been sold for future delivery, and wise planters are already "binding the bargain" in new orders nearly every day. day.

By writing Mr. Teague at Box 88, San Dimas, further information may be had; also the little book "How to Grow Oranges."

IT'S PENNY WISE

Policy to set out a good tree, costing good money and then let the sun burn the bark, or the rabbits gnaw it when for $1.00 an acre you can get Yucca Tree Protectors that are practically indestructible. Write for free sample of the wrap. Yucea Mfg. Co., 2124 Willow St., Los Angeles.

Waite, Bailey & Lynch, buy, sell, exchange, repair and install gasoline and steam engines, boilers, air compressors, power pumps, etc. Otto gasoline engines, all sizes, to 200-H. P., better built, more economical, therefore superior to all others; prices and terms that will insure due consideration. 943-945 N. Main st., Los Angeles, Calif.

Bakersfield had three of the severest earthquake shocks recently that were ever experienced in that city, says the Alta Advocate. Buildings were shaken perceptibly and walls cracked and hundreds of dwellings damaged. The county courthouse was damaged to the extent of several hundred dollars by falling plaster, and several large cracks were made in the walls.

FACTS ABOUT CANCER.

A new booklet published at considerable expense by L. T. Leach, M. D., of 416 Main street, Dallas, Texas, tells the cause of Cancer and instructs in the care of the patient. Tells what to do in case of bleeding, pain, odor, etc., and is a valuable guide in the management of any case. It advises the best method of treatment, and the reasons why. In short, it is a book that you will value for its information. It will be sent by mail, prepaid, on receipt of ten cents, stamps or coin.

FERTILIZERS A·C·W "FOR·THE·LANDS·SAKE"
TRADE MARK

Buy Your Blood and Bone at Home
A. C. W.

Blood and Bone is guaranteed free from Hoof Meal and Horn Meal. These goods are in a fine dry mechanical condition, the product of the largest packing house in Los Angeles. We contract for their yearly output, in its raw state, and get it direct without admixture or manipulation. See our agents for prices or write us direct. A. C. W. complete fertilizers are made now as they have been for the past 12 years, from the best of the best. We pride ourselves on the results obtained in large crops of good keeping fruit when our goods have been used consistently.

Phones { Boyle 3 / Home 6663

Agricultural Chemical Works — *Manfrs. of A. C. W. Fertilizers . . .*
901-907 MACY STREET - LOS ANGELES, CAL.

Our Book of Directions "How to Lay Out a Lawn and Keep It Green" FREE. Write for It.

DRIED GROUND TANKAGE

THE BEST AND MOST ECONOMICAL FERTILIZER

ANALYSIS { 10½ per cent Ammonia / 18 per cent Bone Phosphate

WRITE US FOR PRICES AND PARTICULARS

Western Meat Company - - San Francisco

Now Is the Time to Look Over Your Old Plows

Consider them worn out. Come in and see our line of Syracuse Goods, consisting of Syracuse
Disc Plows, Solid Comfort Jr. Sulky,
Solid Gomfort Gang, Steel and Wood Beam,
Walking Plows, Steel and Wood Beam Chilled Walking Plows
and the old reliable
Fosmir and Stockton Reversible Gang Plows,
the California Disc Plows. Three Gang and larger,
manufactured by us to stand and do the hardest kind of work

Do not fail to see this plow before buying, also Syracuse Steel Lever Harrows, Spring Tooth Harrows, etc. Have you seen the best Wagon on the market? You have not unless you have cast an eagle eye on the Harrison; and remember the location, which is the important part

L. A. MARTIN & SON 137-143 WILMINGTON ST., formerly Old San Pedro St., LOS ANGELES

ROOFING
SHEATHING
BOX LINING
TRAY PAPER
for Drying Fruit
and
FLUME LINING } PAPER

MANUFACTURED BY
PIONEER ROLL PAPER CO., 219-221 So. Los Angeles St., Los Angeles, Cal.

WINE AND OIL MACHINERY

A SPECIALTY

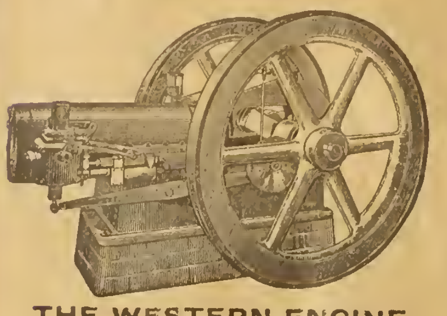
Presses for All Purposes.
Complete Plants Fitted Out.

TOULOUSE & DELORIEUX
618 Commercial St. *San Francisco*
Catalogue Upon Application

DEEP WELL PUMPS
SHALLOW WELL
AND POWER PUMPS
OAK TANNED CUP LEATHERS.
A·T·AMES GALT, CALIF.

THE WESTERN GAS ENGINE

"From Factory Direct to User"



THE WESTERN ENGINE
Maximum Power at Minimum Cost

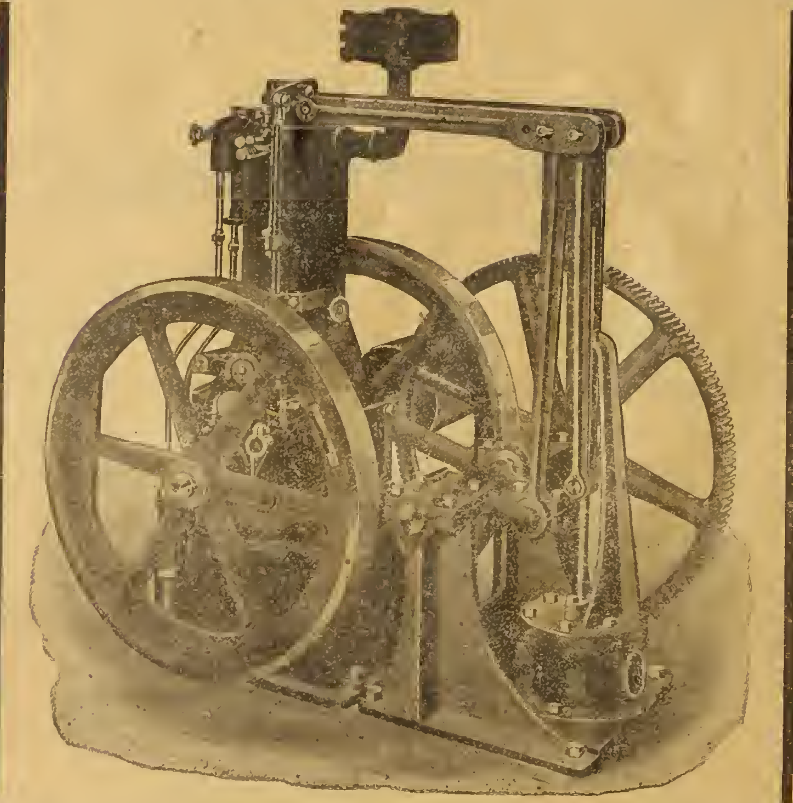
Designed and built by Western experts for Western use with Western fuel. In construction the Western embodies many original, yet practical ideas, which place it in advance of any other make on the market today. The simplest, strongest and best engine for

Irrigation, Power and Electric Plants.
Any Size from 5 to 500 H. P.

Burns cheapest fuel—gasoline, distillate or crude oil with a saving of 20 to 40 per cent over any other style. **Send for Illustrated Catalogue** fully describing every detail of construction; tells **how** and **why** the Western excels all others; it gives the facts the proof. Learn what Western engines are doing for others. Send your name today—ask for latest issue, A6.

WESTERN GAS ENGINE CO.
908-932 N. MAIN ST. LOS ANGELES, CAL.

LITTLE WONDER



That's it's name. Little wonder it is that that is its name and that it is so exceedingly popular It's cheap. It's effective. And it's so handy and always ready. Runs the pump, the cutter, the grinder, the churn—any old thing on the ranch. Look it up right away, because you will be interested.

Wm. Gregory 602 North Main Street Los Angeles

NATIONAL WOOD PIPE CO.

MADE FROM CALIFORNIA REDWOOD OR SELECTED PUGET SOUND YELLOW FIR **WOOD PIPE** WOODWARD PATENT MACHINE BANDED PIPE WHEELER PATENT CONTINUOUS STAVE PIPE BORED WOOD WATER PIPE

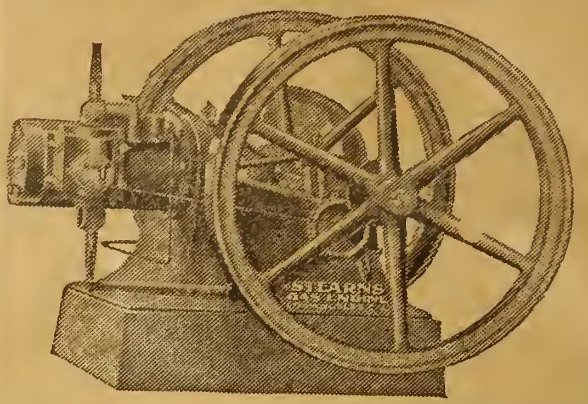
Puget Sound Office, Olympia, Washington
Los Angeles Office, cor. Sixth and Mateo Sts. San Francisco Office, 301 Market St.

A booklet, "The Whole Story About Wood Pipe," mailed free upon request

NO, THIS IS NOT AN ARTESIAN WELL, BUT

AN IRRIGATION PUMPING SYSTEM
SUPPLIED BY
S. J. SMITH MACHINERY CO.
POWER PLANTS, PUMPING MACHINERY AND WATER SUPPLY GOODS 212-214 S. Los Angeles St., Los Angeles, Cal.

STEARNS GASOLINE OR DISTILLATE ENGINE



Has many points superior to any other engine.

Hundreds in Use

Every One Satisfactory

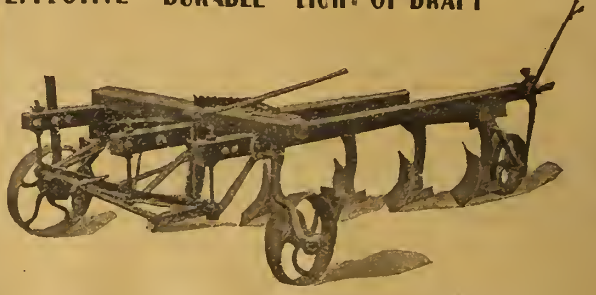
Built for Californi cheap fuel.

For further information, write

STEARNS GAS ENGINE WORKS 1001-3-5 NORTH MAIN STREET
LOS ANGELES, CALIFORNIA

Stockton Reversible Gang Plow

EFFECTIVE DURABLE LIGHT OF DRAFT



This is our regular Plow and Land Shifter and Rear Lever. Land Shifter simple and durable. It is in easy reach of operator and there is no danger of wheel running over foot.

Houser & Haines Mfg. Co.
Stockton, Cal.

The New Pomona Pump

We must not attribute all of the success of the Pomona Pumps to the Pump Head or the part of the machinery above the ground, for there is another part just as essential, and this is the cylinder and valves. Our cylinders are made of the best seamless brass tubing made to our order in the East. The valves are made of the best phosphor bronze and are cast and finished complete in our shop.

These valves are of the most improved pattern, have cone-shaped clappers with ground metal seats. There is only one moving part in each valve and we have never had them clogged with sand. The plungers are furnished with three cup leathers, each made from the best oil tanned leather.

With the New Pomona pumphead using a quick return motion and lap in the plungers, these valves have sufficient time to seat before taking up the load of the water column, consequently there is no hammer or jar. The Pomona Pumps are taking the lead for irrigation purposes and are rapidly displacing pumps of inferior design and workmanship.

Send for catalog and estimates for our new plants.

Pomona Mfg. Co.
POMONA, CAL.

When writing to Advertisers Please mention Cultivator

California Cultivator

LOS ANGELES SAN FRANCISCO

JANUARY 12, 1906

A FIVE HUNDRED DOLLAR WALNUT.

The most famous walnut tree in Southern California; valued by A. R. Rideout of Whittier, who has leased it for a term of years, at five hundred dollars.

Choice of

MANY ROUTES

East and West

SUNSET Via New Orleans and El Paso

OGDEN Via San Francisco

SHASTA Via Portland

Pullman Vestibuled Trains Daily. Personally Conducted Tourist Excursions via all routes every day in the week at Reduced Rates. The SOUTHERN PACIFIC gives you choice of many routes from the northern boundary of the United States to the Atlantic Coast, so that you may go one way and return another, with varied scenery and climatic conditions.

Full information at 261 S. Spring St., Los Angeles, or from any agent

SOUTHERN PACIFIC

RUBEROID ROOFING

The peer of all with 14 years' record for durability and efficiency.
Cheapest because best.

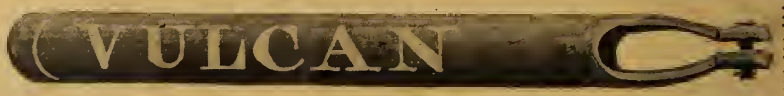
BLAKE, MOFFITT & TOWNE

Both Phones 679 242 to 248 So. Los Angeles St., Los Angeles, Cal.

FIFTY YEARS FROM NOW

Some One May Make a Better

SAND PUMP THAN THE



makes now, but Fifty Years is a long time to wait, and you might be able to earn a dollar or two by using a VULCAN while you are waiting on the other fellow.

Vulcan Iron and Tool Work, 917-919 North Main Street, Los Angeles, Cal.

$3.75 Per Dozen for Six Weeks Old Chicks

ADVANTAGES OF COULSON'S SPECIAL READY MIXED CHICK FEED

PUT SOME LIFE INTO THEM

You who are raising chickens and turkeys, and more especially young chicks. Don't you think it a good idea to PUT SOME LIFE INTO THEM, that is giving them food that will MAKE THEM STRONG AND HEALTHY?

You don't want to see your chicks droop around as though they were HALF ASLEEP, and then find every morning that 15 or 20 of them have KICKED THE BUCKET.

You know there is something in the heart of a grain of wheat or corn, that the mere heat of the soil makes it sprout into a living, growing plant.

You know there is something in the yolk of an egg, that the mere heat of hatching turns into a living chick. Sometimes there is not sufficient of the life-giving quality in the egg and the chick dies before it is hatched; and sometimes they hatch out more dead than alive, and the chicks drag out a miserable existence for a few days and finally give up the struggle, stretch out their legs and die.

There are many secrets in nature, but it is written in the Bible, "Seek and ye shall find." Suppose you should find this "something" that you could just feed it to the young chicks and give them STRONG VITALITY, so that they would grow—to beat anything you had seen before.

IT'S THE LIFE GIVING QUALITIES in Coulson's Food—THAT'S WHY Coulson's Special Dry Chick Feed raises the NICEST, LARGEST and HEALTHIEST CHICKS.

Coulson's Special Dry Chick Feed puts the life into them and makes strong, healthy chicks.

That is why Coulson's Food is different from the imitations.

A prepared Chick Feed composed of sound, selected grains broken to the proper size and blown free of dust is the most economical feed for young chicks. One hundred pounds will feed as many chicks as two hundred pounds of ground grain or cracked wheat. Why is it preferable?

The proper feeding of poultry is without doubt the most essential factor in the raising of any kind of poultry for profit.

Considerable advancement in the feeding of poultry has been made in the past few years, especially in the feeding of little chicks.

On nearly all the large poultry farms chicks are now started entirely on COULSON'S SPECIAL READY-MIXED DRY CHICK FEED.

AT ARMOUR PACKING CO., KANSAS CITY.

Loading cars of 400 bags of freshly cooked and baked hearts and liver meal. The small pieces of cook meat (about the size of a pin head), is used in Coulson's Special Chick Feed It is fresh, sweet and tender, and is great stuff to make chicks grow. If you want to raise a nice bunch of chicks, get a sack of Coulson's Special Dry Chick Feed.

SAVE YOUR CHICKS

Keep them from bowel trouble and all ailments incident to the first five weeks. Profit lies in the chicks you raise to maturity—not in the number hatched. Give them a ration that makes healthy, well developed bodies.

Coulson's Special Chick Feed

Contains ingredients that long experience in poultry raising has found best adapted to give nourishment to growing chicks. It is promptly digested; causes no indigestion; keeps the bowels in normal condition. Chicks show increase in weight, strength and beauty when fed it exclusively. Little chicks need no other food for the first five or six weeks. Save your chicks and make good profit.

Remember Mr. Bassett sold broilers only 6 weeks old for $3.75 a dozen.

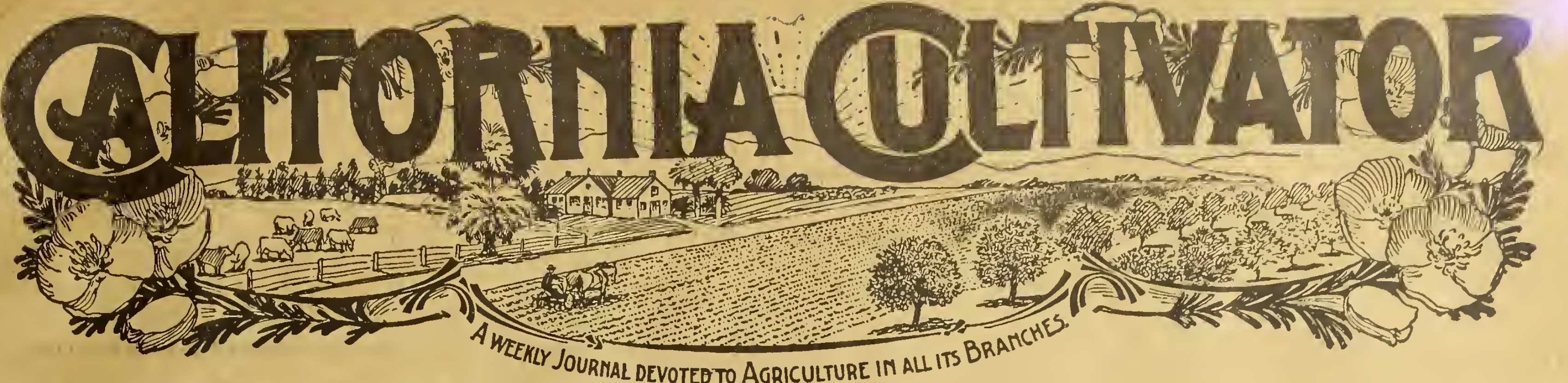
TRY IT THIS YEAR.

Ask your dealer for COULSON'S SPECIAL CHICK FEED. Tell him no other kind is good enough for you. You want the best, and that's Coulson's.

Special Prizes to users of Coulson's Special Dry Chick Feed.
$500.00 to be given away. Look for a little envelope in every 10-pound sack of Coulson's Special Chick Feed.
Ask your dealer for Coulson's.

Coulson Poultry and Stock Food Co.

Petaluma, California


CALIFORNIA CULTIVATOR
A WEEKLY JOURNAL DEVOTED TO AGRICULTURE IN ALL ITS BRANCHES.

Vol. XXVI—No. 2 LOS ANGELES, CAL., FRIDAY, JANUARY 12, 1906 Subscription $1 a Year

The Inoculation of Leguminous Plants

By Karl F. Kellerman, Physiologist, and T. R. Robinson, Assistant Physiologist, U. S. Department of Agriculture.

Farmers' Bulletin No. 240.

The method of distributing practically pure cultures of nitrogen-fixing bacteria dried on cotton has not proved entirely satisfactory owing to varying conditions of air during transit in the mails and to certain matters connected with laboratory technique. While the number of unsuccessful attempts to secure inoculation by users of cotton cultures sent out by the Department of Agriculture is small, it has been recognized that the methods of preparing the organisms and distributing them were open to improvements. Investigations have been under way for some time with a view to improving the methods followed, and as a result the Department is now prepared to send out bacteriologically pure cultures in small tubes hermetically sealed.

The experiments carried on by the Department of Agriculture have demonstrated the fact that by the proper use of practically pure cultures the nodule-forming bacteria are actually carried into the soil. These bacteria are able to form root nodules, and where other conditions are favorable the inoculation thus brought about makes possible the growth of a legume in soils where it had failed previously from lack of bacteria. The original cultures used, however, must be prepared with the utmost care and with a view to preserving or increasing their natural power of nitrogen fixation rather than merely to make them grow under favorable conditions.

* * *

When Inoculation is Desirable—(1) If a soil is low in organic matter and has not previously borne leguminous crops.

(2) If legumes previously grown on the same land were devoid of nodules.

(3) If the legume to be sown belongs to a species not closely related to one previously grown on the same soil.

* * *

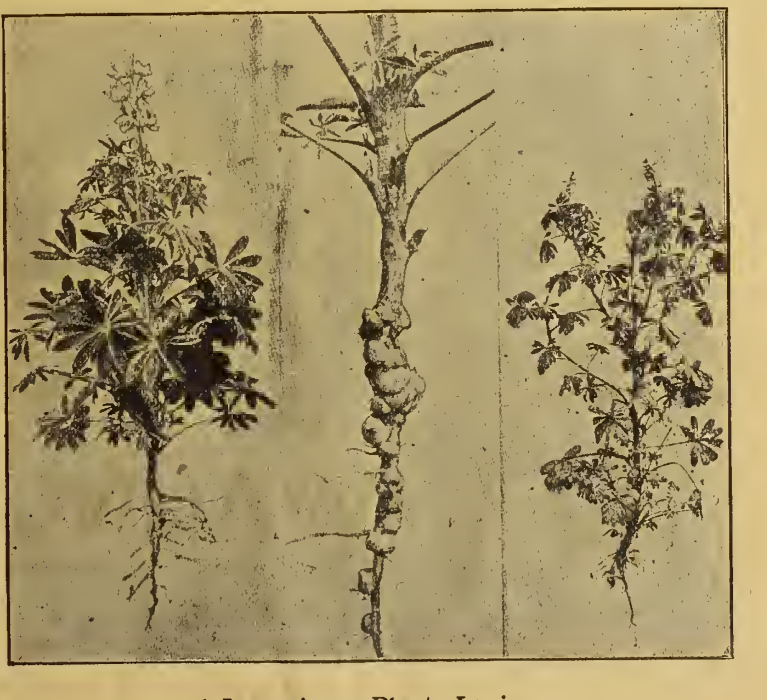
When Inoculation May Prove Advantageous—(1) If the soil produces a sickly growth of legumes, even though their roots show some nodules.

(2) If a leguminous crop has made a stand but gives evidence of failure, due to the absence of root nodules. Under such conditions it is advisable to apply the culture liquid by spraying or, better, by top-dressing the land with soil moistened with the culture liquid, as explained in the directions.

When Inoculation is Useless—(1) If the legumes usually grown are producing average yields or the roots show nodules in abundance.

(2) If the soil is rich in nitrogen. It is neither necessary nor profitable to inoculate a soil rich in nitrogen; few nodules are formed under these conditions.

Cultures of nitrogen-fixing bacteria are not to be regarded in the light of nitrogenous fertilizers, increasing yields under all average conditions. The bacteria do not contain nitrogen. If conditions are favorable, they render nitrogen obtained from the air available for the legume.



A Leguminous Plant—Lupine.

First Flowering Showing Tubercules Second Flowering

* * *

When Inoculation Will be a Failure—(1) If the directions are not studied intelligently and followed carefully.

(2) If the soil is acid and in need of lime. Liming to correct acidity is as important for the proper activity of the bacteria as for the growth of the plants.

(3) If the soil needs fertilizers, such as potash, phosphoric acid, or lime. The activity of the bacteria in securing nitrogen from the air and rendering it available to the legumes will not take the place of such fertilizing elements as potash and phosphorus.

It must be remembered that inoculation will not overcome results due to bad seed, improper preparation and cultivation of ground, and decidedly adverse conditions of weather or climate. Before attempting to inoculate a new crop, the farmer first should inform himself thoroughly concerning the proper handling of the crop itself; otherwise failure is almost certain. As an illustration, sowing alfalfa on hastily prepared land, on land foul with weeds, on acid soils, or soils underlaid with hardpan is contrary to accepted practice. Free publications covering the essential points in growing all common legumes may be obtained from the State experiment stations and from the United States Department of Agriculture.

* * *

Keeping Cultures for Future Use—The possibility of farmers keeping cultures from one year to another has been suggested. This practice is not to be advised in any case. For good results it is necessary to start with a fresh, pure culture. The pure culture, moreover, can be prepared only by a trained bacteriologist with laboratory facilities.

* * *

Confusion of Nematode Galls With Nodules—Nematode galls, or root knots, are often mistaken for nodules, which they resemble in apearance. The nematode gall is extremely injurious, and in regions where it has been known to exist it is unwise to plants crops favorable to the development of the pest. Nearly all of the legumes should be avoided. This is important not only because the legumes susceptible to nematode attack are themselves injured, but chiefly because they furnish conditions favorable to the rapid development and multiplication of the nematode worms, and these may become a serious menace to succeeding crops or to orchard stock, which, under ordinary conditions, they would scarcely injure. There are, however, some resistant varieties upon which the nematode worm can not develop, and in infested regions these resistant varieties should be used exclusively. If a leguminous crop with its roots covered with what are apparently nodules makes a sickly growth, or if there is doubt as to whether a legume is inoculated or infested with nematodes, samples for examination should be forwarded to the Department of Agriculture.

* * *

Danger in Inoculation by Soil Transfer—Very satisfactory inoculations have been obtained by transferring soil from old fields where legumes have grown, but there are dangers incident to such soil transfer which should be avoided.

The source of supply should be very definitely known, and in no case should soil be used from fields which have previously borne any crops affected with a fungous disease, a bacterial disease, or with nematodes. Numerous animal and plant parasites live in the soil for years and are established in so many localities that it is manifestly unwise to ship soil indiscriminately from one portion of the country to another.

Of scarcely less importance is the danger of disseminating noxious weeds and insect pests through this plan of inoculating by means of natural soils. Even though weeds may not have been serious in the first field, the great number of dormant seeds requiring but a slight change in surroundings to produce germination is always a menace.

If soil is to be used, however, whether obtained from nearby fields or shipped long distances, the evidence should be clear that the soil is free from the objections mentioned above.

BY J. W. MILLS, POMONA, CAL.

GRAPE QUESTIONS FROM BELOW SEA LEVEL.

Editor Cultivator: What is the best grape for culture here. If you were going to plant grapes at Imperial (table grapes) what variety would you plant? If you were going to plant 80 acres of table grapes would you plant it all to one variety; if not, what varieties and what proportion? Will Malaga grapes color in Imperial Valley? What other varieties will color well and are good shippers? Can Muscats be grafted over to Malaga successfully? What distance apart should Malaga grapes be planted, how far apart for wagon roads and how far apart should wagon roads be? How long should the rows be?

SUBSCRIBER, Imperial.

As far as we are able to determine at this time, Malaga grapes seem to be the best. This is experience of actual experimenters in the Valley down to this time. There may be other varieties that will be more profitable. Experience alone can tell. There is an experimental vineyard at Mecca, at the Date Garden, which is on sandy land with clay strata every few inches. There will be a collection of the best table grapes at two points near Mecca on the heavy land, and one eight miles east of Imperial on moderately heavy Imperial soil. If we were going to plant 80 acres to grapes in the Imperial Valley, we would be like the proverbial Irishman and "not do it" unless some local demonstration warranted such an enterprise. If Malagas show that they are profitable, we would plant them to a limited extent, remembering that one or two seasons do not prove anything. Wait and see what the experiments now under way demonstrate, and then there will not be so many disappointments. An individual can experiment in a smal way, but when it comes to devoting broad acres to such work it becomes expensive.

Muscats may be grafted over to Malagas very readily. The Malaga is the strongest grower of the two and there will perhaps be a difference in the vigor of the growth of the Malaga after being placed on the Muscat root. This, however, is only conjectural, as we have never seen the trial made. The fact that Malaga and Muscats are so nearly alike should make their affinity an assurance.

If Malagas color in the Imperial Valley, they will have to change their nature, as they are naturally a white grape. Should they show a tendency to change and put on color, there will be a rare chance to develop something new that would have the promise of great value. We cannot tell what varieties color well in the Imperial Valley. That is to be determined.

Malaga grapes, being very vigorous growers, they should be planted not less than ten fet apart. The usual distance for ordinary growers is eight feet. Avenues for driving through should not be less than fourteen feet. With the rows ten feet apart, the avenues should not be more than thirty rows apart, twenty would be better. Experience shows that double rows are more convenient than squares. If, instead of planting in ten-foot squares, the vines be planted in rows five feet apart and the vines five feet apart in the rows, alternated with driveways, the same number of vines per acre is calculated by they would be much easier handled both at plow time and at the harvest, as the greater part of the plowing and cultivating could be done with heavy teams, and wagons could be driven any place in the vineyard at harvest time, spaces between every two rows being fifteen feet wide. It may be that Malaga grapes will make strong enough growth in the desert country to trellis in order to get the best results. In that case sunburn could be easily reduced by the vines being close together in the rows. By training the vines on the wires all in one direction the tops or outer ends of the vines may be trained over the bearing portion of the next, which is near the trunk, thus providing double protection. The number of vines per acre is calculated by multiplying the distance between the rows by the distance between the vines in the rows, and dividing 43,560, the number of square feet in an acre, by this number. If the vines are 10 feet apart, there will be 435 vines per acre. When planted in double rows 5 feet apart in the rows, and the spaces or avenues 15 feet wide, there will be the same number of vines per acre.

It is hardly practical to irrigate rows longer than 40 rods, and 20 rods is a better length. The length of irrigating furrows should be determined by the slope of the land. Land which has a slope of over 20 feet to the mile will wash rapidly with furrows over 300 feet long.

* * *

TOKAY ON TRELLIS.

Editor Cultivator: I would like to ask if Tokays may be properly grown on trellis and if so, how should I prune them? I find that the Tokay does better with me than any other variety, and I would like to know if there is any fertilizer which I can use to give them a better color. I have so many green ones.—J. R. U., Tropico.

The Tokay grapes may be grown on trellis, but it will require considerable water to properly grow them. If the vines are pruned long, as they will have to be if grown on a trellis, a larger number of bunches will set than when pruned in the usual way. The vine is a very vigorous grower and will grow very well on a trellis. Two branches will be sufficient to start with after the first year, and these may be increased after the vines get older. There should be about three buds left on each year when the canes are cut. This will be very sure to give two good canes the following year. Should more than two grow, one should be removed early in the summer before the young growth gets to be over six inches in length. When pruning time comes again, leave the cane that is situated the highest on the vine and trim the lower cane to three buds as before. Watch this spur during the early summer and do not allow more than two canes to mature. When pruning time comes again, cut off the cane that was left long, as low down as possible, which will be to the point above where the two new canes grow. This brings the crown of the vine down to the lowest level and the two canes of the past season's growth will give material to repeat the operation. Another way to secure a long vine for trellis is to train a cane over the trellis and prune the canes that come out at intervals along the branch, just as you would a young vine. This main branch should not be allowed to grow its full length the first year, but cut it back to about two feet the first year and allow it to extend from year to year. We prefer this method of trellis growing the Tokay to the first described method. The Tokay should be pruned with about two more buds to a spur than the Muscat.

We know of no fertalizer which will give Tokay grapes a darker color.

* * *

GRAPES FOR VENTURA.

Editor Cultivator: Will you please tell me what varieties of table grapes are best suited to our light gravelly soil? What varieties are most desirable for the Los Angeles market? What varieties should be grown for the winery? Please mention names of buyers of table and wine grapes to whom I could write for more detailed information.—M. W., Moorepark.

Chasslas Rose, Plue Portuguese, Cinsaut, Malaga, Olivette de Cadanet, Napoleon, and Golden Queen are

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good table varieties for sandy soil. For wine grapes, Pedro Jimines will do for sherry. Carignane is a good upright grower and prolific. It makes a good red wine of the port type. Charbono is a very productive variety, producing from five to ten tons of grapes per acre. Alacante Bouschet is a very prolific grape and is useful as a coloring grape.

Address the manager of the Italian Vineyard Company at South Cucamonga for information along these lines. The most attractive grapes on the Los Angeles market are Purple Cornichon, Tokay, Malaga, Muscat, and Black Morocco. This last variety should do well with you.

* * *

A JULY PEAR.

Editor Cultivator: Can you mention in your paper a pear that will ripen in this locality in July? My Madeline ripens early in June, Lawson last of June, and Bartlett the first of August. I want a pear to ripen between Lawson and Bartlett. How is Dearborn's Seedling?—X. Y. Z.

Dearborn's Seedling is a good one. Beurre Gifford is also another good pear. These two come in at the season you wish. Annie Ogereau is another good pear that ripens in the period during which you are lacking pears.

AGRICULTURAL EDUCATION.

The farmer boy or girl comes to the public school with fundamental economic, social and educational needs that should be met with special training in agricultural lines. The teacher comes to the public schools with new ideals of education that make the industrial element an essential of sound education and with an abundance of material for useful instruction in agriculture. Surely old time traditions and prejudices cannot long bar the way to the effective teaching of agriculture in our public schools.

But some one rises up and says it will cost too much to give farmers' children such instruction in the public schools. I cannot believe that such an argument will have much weight with the American public in general or with the California public in particular.

No doubt we must pay more for our public schools in the future than we have in the past. We must have better school houses, better trained teachers and more apparatus and illustrative material, and we must pay the bills for these things. But it has been proved over and over again that education of the right kind promotes industrial wealth as well as the general well-being of mankind. And if the states where the public school system of the past, with all its limitations and defects has been most thorough in its work have been the states where the general level of material prosperity has risen highest, and no man who knows the facts will deny this, surely it is reasonable to expect that an education which aims directly to promote industrial efficiency, as the new education does, will more than pay for its increased cost by the increased wealth which it will produce. If literary education has been a very profitable investment for the American public, industrial education is likely to prove a bonanza.—A. C. True.

Four hundred ranchers of the Westminster district in Orange County, have forwarded a petition to President Roosevelt asking for an investigation into the appropriation of the waters of Bolsa Chica Bay by the Bolsa Chica Gun Club as a shooting preserve.—Compton Enterprise.

THE USEFUL TOAD.

The common toad renders notable service to farmers and gardeners throughout the entire growing season; yet to many its worth is unknown, while to others it is even an object of disgust, if not of fear. It must be admitted that to some the toad can never be an attractive animal. Nature has denied it the gay colors of bird life or even the sinuous beauty of some of its reptile relatives. Yet, judged by the standard of good works, the toad does not suffer by comparison with any of the lower animals.

The toad has always borne the burden of false and even ludicrous misrepresentations, and these traditions are to be met with even in this era of progress, and coupled with them we hear of the equally surprising ability of the toad to produce warts on the hands; to poison infants by its breath; to bring good fortune to the house in whose new-made cellar it takes up its abode; and, finally, to cause bloody milk in cows if killed by accident or design. The writer well recalls the shock his credulity received when in the inquisitive stage of boyhood he faithfully tested several of these superstitions with only negative results. When so much that is false has been written about the toad it may not be amiss to increase the scanty literature of facts concerning this humble servant of man as determined by a somewhat intimate acquaintance extending over a decade or more.

The belief that the toad is venomous probably arises from its habit, when disturbed or roughly handled, of ejecting through the skin a certain milky acrid fluid. No harm attends contact with the fluid on the hands, but dogs attempting to bite toads show signs of discomfort, and even distress, due to this acrid secretion. That the fluid is not objectionable to all animals is shown by the avidity with which certain hawks and owls capture and eat toads.

The toad is of direct service to man by reason of the noxious insects which it destroys. Should it feed on beneficial insects, it would be to that extent an injurious animal. There is only one way to determine accurately to what extent an insectivorous animal is beneficial or injurious, and that is by careful examination of the contents of a sufficiently large number of stomachs collected at different dates and over a suitable range of territory.

A thorough investigation shows that their food consists of: Ants, cutworms, thousand-legged worms, tent caterpillars, ground beetles and allies, weevils, miscellaneous caterpillars, grasshoppers, crickets, spiders, sowbugs, potato beetles and allies, carrion beetles, miscellaneous beetles, snails, angleworms, vegetable detritus, and gravel.

THE WALNUT.

Over $10,000,000 is expended annually for nuts in the United States, and California supplies but $300,000 worth, provided the season is not too dry and the trees do not suffer in that state from a drouth.

An 8-year-old English walnut tree will produce 100 pounds of nuts, which sell for 12½ cents a pound. About 100 trees are set to the acre, which makes the nut a profitable crop. In planting English walnuts, it is understood that the second generation must be secured, as the third, fourth and fifth generation will not produce. This is an important point which experimenters must not overlook.

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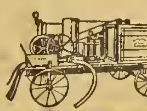

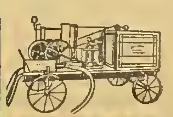

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embody the practical experience of the best growers and contains scores of important details which are absolutely necessary for rapid, thorough work without annoying delays. You know that little things are what cause delays and expense, and it is all such points that five years of experience have eradicated from the **Bean Power Sprayer.**

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Write to-day for our free illustrated catalogue No. 18, which gives all particulars. State number of acres and kind of fruit. (Catalogue No. 16 describes hand pumps.)

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Story of California's Finest Walnut Tree

The beautiful picture seen on the cover page of this issue is from a photograph of the largest, most productive and best shaped walnut tree in California.

It is known in this vicinity as the Chase tree, Mr. Chase being the owner for many years past.

When I became interested in this tree Mr. Chase gave me the name of a man who could give me a history of it. I wrote to him, and here is his reply:

Dear Mr. Rideout:—Yours at hand, and ,will say that the Chase walnut tree in question was planted in 1886 by Mr. Van Vorce, who bought all his walnut trees from Niles of Los Angeles, the thoroughbred stock raiser. Niles obtained his French seed from Gillett, the Barren Hill nurseryman, who had already imported five or six varieties grown in California, from France. The Van Vorce trees are all seedlings from French nuts and show several of the French varieties. As the tree in question is not grafted, it could not be termed a distinct variety, but comparing the nuts with the Mesange it answers the description in every detail. My young trees here in Sonoma County, planted from the Chase tree, bore last year and this, and show no sign of the disease or scab, while the other walnut trees here were nearly ruined by it this year.

I already have a fine photograph of that tree which I brought up with me nine years ago to accompany a sack of seed walnuts which I sold here for 50c per lb.; much obliged, just the same, for your offer to send me one.

Yours truly, C. L. WHEELER.
Sebastopol, Cal.

These Trees Were Grafted Last March on Yearling Roots.

Judging from this letter I am led to believe that this particular tree is a Mesange, but be it whatsoever kind it may it is a remarkable prodigy, towering far above its fellow trees as does Mt. Blanc above the other peaks of the Alps. With a perpendicular sun this tree would cast a shadow 60 feet across. I leave it with the readers to judge the height. These orchard trees were planted 40 feet apart and the limbs of the adjoining trees have been intertwining for several years. If this tree had had plenty of care, water and space, it would have been much larger.

The leaves are very broad and the foliage protects the nuts from the sunburn causing so much loss to the grower when the crop is nearly matured.

I consider this the best proposition before the American people. Here is a monster tree, free from dead wood, free from sun burned nuts, unharmed by the bacterial disease, very prolific, bearing yearly an enormous quantity of fine flavored nice sized soft shelled walnuts.

I would recommend planting these trees 60 feet apart with one in the centre of every square and as soon as the limbs begin to interfere cut out the centre ones, leaving a perfect orchard of hardy trees.

There have been more orchards in this vicinity planted from this tree than from any other ten trees.

I have leased this tree for a term of years, having to give for the nuts and one thousand grafts ($50) fifty dollars per year. At the end of the last year of the lease I agree that the following nut crop will be (300) three hundred lbs., its average yearly output, and if it falls short of this amount I am to replace the difference in exchange prices. I further agree that if I kill the tree by cutting grafts therefrom I am to pay the owner ($500) five hundred dollars, and have given a bond to that effect. Below is what our inspector says about this tree:

This is to certify, that I have examined the walnut tree known as the Chase tree, and I find it apparently free from bacterial disease, and nuts of fine quality.

WM. WOOD,
Horticultural Inspector.

* * *

Another Proposition.. For the people who are in districts where the bacterial disease is very severe, I have a remedy, I think. As the non-rust wheat was obtained in this way, why will this not prove a panacea for the walnut disease. I have a tree standing in a very badly diseased orchard that is absolutely immune, and has proven itself to be so for several years. Any time during the walnut season can be picked from under the trees on all four sides a bucketful of diseased nuts and the branches are badly scarred also, but not a trace can be found upon this particular tree.

A spot appeared upon the shell of a nut and was tagged and watched, but if it was the disease it did not reach to the shell. Mr. West, hired by the State to study the disease, and myself went down to see the tree and cut the spot from the nut and it was only on the surface. This tree is an even bearer and the nuts are a little larger than the average, but its stronghold is in its power to resist the disease. I have the nuts and grafts from this tree also. None of these for sale till next year.

* * *

Another Variety. The Placentia Perfection seems to be to Southern California what the Franquette is to Central California, very popular.

Last year I grafted quite freely to this kind and got several thousand grafts. Mr. C. W. Leffingwell secured the bulk of these before the summer was over, but I yet have a few smaller sizes for sale. The Placentia Perfection is noted for its smoothness, large size and excellent flavor, being greatly prized and sought after by the confectioners for its sweetness, being easily cracked, leaving a very plump and perfect kernel.

I will have some choice two year old trees from 8 to 15 feet, seedlings, and grafts to offer next year.

I promised a nurseryman to secure him some Placentia nuts for planting but not caring to part with any of mine I went to Placentia to secure them, but the nuts from the grafted trees there were so rough and ill shaped I could not account for them, so I took a handful over to the man who originated them and asked him if those nuts were Placentia Perfections and he said they were and the reason of their being so rough was that during the pollenizing season they were affected by the hard shell, there being so many in that district. I did not buy but concluded to spare a few of mine. I secured mine from a grafted orchard in our vicinity that has no hard shell near to contaminate them.

I also have secured the nuts and grafts from a tree known as the Gold Medal Tree, reputed to have taken the prize at the Paris Exposition.

I do not know very much about this tree as the former owner has gone abroad to live, but they are beautiful. large nuts and the tree is nicely shaped but farther than this I know nothing.

I believe the grafted tree is the only kind to plant, and I consider it cheaper at $1.00 and $1.50 than the seedling at 30c or 50c. But the prejudice against them is vanishing as it did against the soft shell when it was introduced.

I was very successful in my budding and grafting this year, as can be seen from the picture of my grafted nursery. Other standerd varieties kept. I sell my trees at the market prices and orders wil be booked as they are received. I also keep a general line of citrus, deciduous, ornamentals, berry bushes, etc. Here is what the commission merchants, Minton & Robson, say about the Improved Gardena Dewberries:

"We handled the Dewberries for Mr. Rideout, and the returns he received compel us to believe it is a good and safe investment to plant the berries for the market."

MINTON & ROBSON.

I wish to say that these gentlemen dealt very squarely with me last season and I was well pleased with the returns they sent, also with Marx & Son. I did not ship much to any other firms last season but as I got so severely bitten the other two years, I wish to say a word or two here that will help to spare some other poor unfortunate the same abuse.

No matter who you ship to or what amount you send, have them give returns at least once a week; six times is better. They will do so if you insist, and you must insist. Do not let them get slack about it, either. They can render statements every day, for every day they sell your goods for the cash, and their commission will justify the extra work.

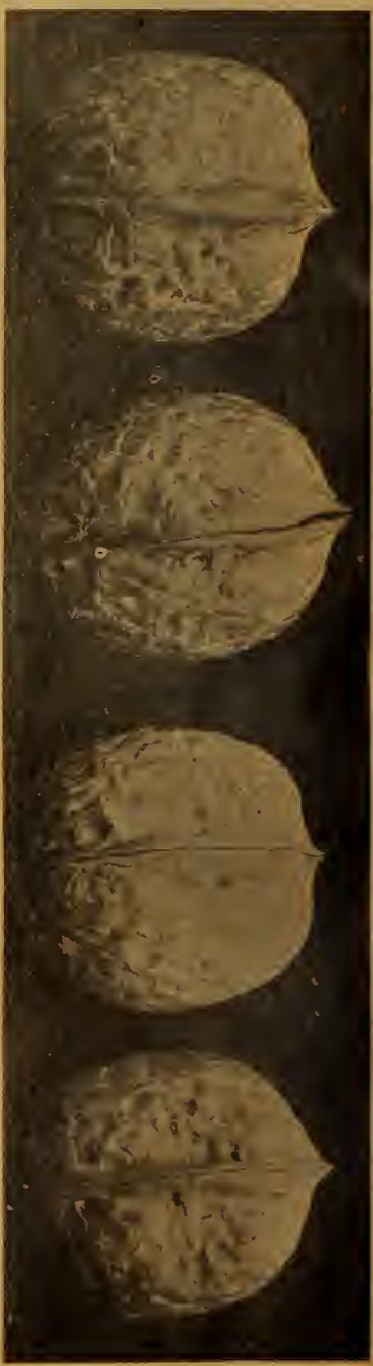
One word to my customers that purchased berry bushes last year and year before: If for any fault of mine your bushes did not grow, remember I will replace them free, though I feel perfectly safe in making this offer. If the express company was at fault, report the same and I will look it up, but if you had bad luck through your own fault and wish another trial, I will make you a discount on another order.

I have a fine lot of choice plants this year now ready for delivery, of Improved Gardena Dewberries, Brandywine Strawberies (Kellogg Strain) and all other varieties, at market prices.

All questions answered and will show the trees or bushes to any person who calls on any day except Sunday.

Respectfully yours,

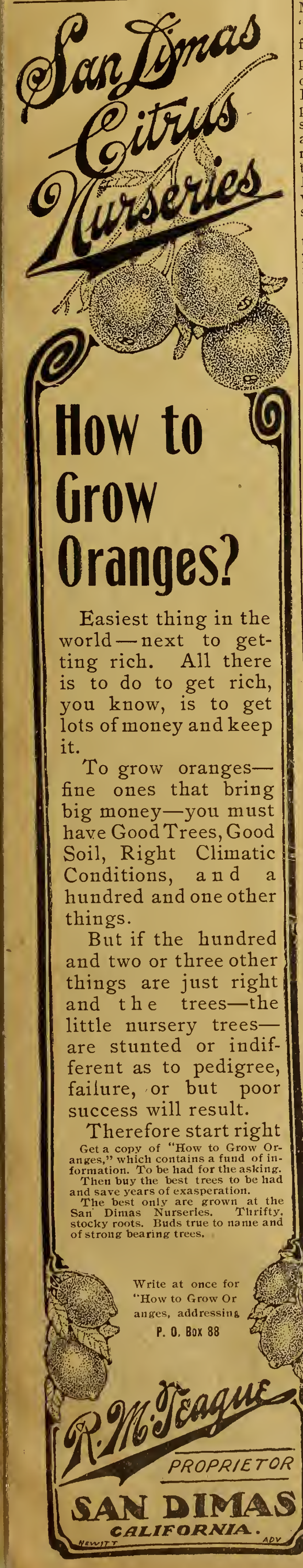
A. R. RIDEOUT, Whittier, Cal.



(Natural Size.)

Mesange,
Placentia Perfection,
Prize.
Immune.

John Isaac, secretary of the State Horticultural Commission says that there is yet plenty of time for fruit trees to make a good crop, as they do not need so much water early in the season. "There is no reason" he says, "why fruit growers should be in any way discouraged, as there is still plenty of time for an abundance of rain."



San Dimas Citrus Nurseries

How to Grow Oranges?

Easiest thing in the world—next to getting rich. All there is to do to get rich, you know, is to get lots of money and keep it.

To grow oranges—fine ones that bring big money—you must have Good Trees, Good Soil, Right Climatic Conditions, and a hundred and one other things.

But if the hundred and two or three other things are just right and the trees—the little nursery trees—are stunted or indifferent as to pedigree, failure, or but poor success will result.

Therefore start right

Get a copy of "How to Grow Oranges," which contains a fund of information. To be had for the asking.

Then buy the best trees to be had and save years of exasperation.

The best only are grown at the San Dimas Nurseries. Thrifty, stocky roots. Buds true to name and of strong bearing trees.

Write at once for
"How to Grow Or
anges, addressing
P. O. Box 88

R. M. Teague
PROPRIETOR
SAN DIMAS
CALIFORNIA.

CITRUS FRUITS

THE CALIFORNA POMELO.

In "The Citrus in California," bv B. M. Lelong (1900) we find that in 1897 "a number of growers and shippers from different sections of the Southern part of the State" collected a number of samples of different verieties of Pomelos for testing as to their comparative merits. The verdict of this self-constituted jury gave first place to a fruit described as follows: "flat, round, heavy and of a delightful 'bitter sweet' so much enjoyed in the East. It has quite a few seeds, but very little "rag" or waste, running in sizes from 42 to 80 to the box."

In 1901 a committee appointed by the Farmers' Club Institute of the previous December, on Pomelo Nomenclature, carefully examined all varieties of Pomelo brought before it and thus described this same variety; "Nectar, dense, firm texture, peel smooth and bright, pale lemon color, oil cells small and numerous, size 42 to 80, abundant juice, vinous, excellent, bitter element distinct. Highly recommended for market."

The name of this variety is not important in this paper as there are several names given to practically the same type and practically of equal value. In reporting the work of this committee one California paper said: "Ask an Eastern fruit dealer and he will say 'California grapefruit is no good.' "

Some years ago I shipped a few boxes of Pomelos in a car of oranges and they were sold in Philadelphia to a leading fruit dealer. If I recollect correctly, he paid the munificent sum of $2.25 per box and sold the fruit from $2.00 to $3.00 per dozen. In criticising the fruit to a relative he said this was the best he had had from California.

During the season of 1903-4 my fruit had become so well known locally as to find ready sale at remunerative prices. The secretary of our local exchange desired I should make a shipment to New York, as he thought I ought to find a market there for such fruit as I was producing. Acting under his advice, I shipped perhaps two hundred boxes and the lot was divided between Philadelphia and New York. That sold in New York brought me about 10 cents per box, while the Philadelphia fruit brought, I think, 40 cents per box, both f. o. b. the packing house. Thus far I have given you "just facts" and now, in acordance with the request of the Editor am to give you my opinion.

First let me ask you why did fruit which will command $1.50 to $2.00 per box locally sell for but 10 cents and 40 cents in New York and Philadelphia? And may it not be for the same reason that "Eastern fruit dealers" condemn "California grapefruit" as "no good."

I am convinced that if we could exterminate all Pomelos other than those of the type named and the seedless, California Pomelos would soon rank with Florida's. I believe all these to be commercially worthless. If we consult the grower as to the value of the Pomelo, we will hear different expressions. If we put them all together we will conclude that the consensus of opinion condemns the fruit as worthless commercially; yet we will find that several growers are getting fair returns, but not enough to cover the losses of the balance.

Some time ago, in talking with a buyer, I remarked "I have been asked to write a paper on the Pomelo; would I be justified in saying that three-fourths of the Pomelos raised in California are commercially worthless? "His answer was "Yes sir," three fourths, if not seven eighths. What do I mean by commercially worthless? I mean that it has no commercial value—will not sell on the market for a remunerative price.

At the time of the publication of the findings of the Committee on Nomenclature above noted it was found that one special variety was characterized in part as "Size small, 80's to 150's, running heavily to the latter, sweet and fine flavor, not recommended for marketing purposes."

This publication brought a protest from a grower of this variety. It is true the flavor is fine. It is true I have handed specimens, properly peeled to be eaten out of hand by persons who had not "learned the fad" and did not like Pomelos because they had never eaten any, and who pronounced them fine, etc. But the size is too small for the market. There is no use quarreling with the trade because it will not take our small sizes, it won't, at a paying price and that's all there is to it.

One of my neighbors was raising a well-known and usually (at that time. popular variety and under the impression he had a good thing budded several trees and set out a small grove. Next year he budded them to oranges. They were not the right shape. Some nursery men are still cataloging this variety for sale.

If we raise Pomelos for family use or to give to our friends there are several varieties to be highly commended. I have one variety which I have had rebudded (but have saved two trees for my own use). When it was proposed, at that same committee meeting to condemn this variety as "not recommended for market" a lady fancier protested that "the flavor was delicious." The chairman saved himself by substituting "not generally known."

The Nectar Pomelo

I have on several public occasions made demonstrations of the Pomelo, ways of using the juice, etc., and have always used a much despised (for market) variety. I have carried many a basket of the same kind and shipped many a box to friends who would appreciate them. I could not afford to ship them with expectation of other recompense than "thank you" and I always got that. But the Easter buyer will not take them at a price that will allow the grower anything.

The market wants a fruit not smaller than 80's and prefer to stop at 64's. A fruit flat-round that will cut up with two halves that will each set on a plate cut side up. A fruit that grows spherical or pear-shaped is not desired. Now there are several varieties (so called) whose similarity in types would seem to warrant the bunching of all under one name. These, with the addition of the seedless, comprise all there is of intrinsic value among California Pomelos. If all other varieties were budded over, so destroyed as producers of their old varieties the general value of the California Pomelo would not be "no good."

There seems to be a general opinion that California cannot produce the Pomelo equal to Florida. Want of critical knowledge compels me to be slow to make assertions. But so far as my knowledge goes I claim this fruit comes mighty near being as good as Florida's though possibly not equal to it. And I am quite sure there are several other groves whose products will join with mine to sustain California's right to hold up her head.

I had the pleasure to receive a letter from a purchaser of my fruit informing me that shipments had been made to three different points, a box in each case, and that the response in each case was "best I have tasted" or "best I have eaten." In these cases

(Continued on Page 43)

CITRUS SEED BED STOCK
F. H. DISBROW NURSERIES
PHONE 949 R. D., PASADENA, CAL.

Valencia Late

And all leading varieties of orange and lemon trees, and Marsh's seedless grapefruit. Trees one and two years old. Extra fine and thrifty and no scale. Plenty of fibre roots.

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VALENCIA LATE

And all the leading varieties of Orange, Lemon and Marsh's Seedless Grape Fruit Trees for sale. Are principally two years from bud and very fine. Can furnish from my nurseries at Glendora, Riverside or Redlands, as desired. Address

Redlands Nurseries, E. I. Martin, Prop., Redlands, Cal.

Citrus Trees

The Philippi Nurseries
Rocklin, Cal.

THE OLD ESTABLISHED
WOODBRIDGE FERTILIZERS
ARE RELIABLE
THE WOODBRIDGE CHEMICAL WORKS
318 East First St.
Los Angeles, Cal.
South Pasadena San Bernardino

Stop! Listen!

Buy Orange Trees that are true to name. I do not own the largest nursery in the world, but can produce the best trees in the world, and can beat the world on prices, according to quality.

H. M. Cole Third House S. Hill Ave Pasadena, California
Sunset Phone Main 450

10 per cent gross on every car is being saved by growers using the new patent Cyclone Car Cooler (Famous Intermittent Vacuum Method). Address today Chas. F. Edson, Manager Citrus Cooling Company, 950 West 20th Street, Los Angeles, Cal.

ORANGE TREES

Oldest Established Citrus Nursery in California, at Alhambra, Los Angeles County

Late Valencia and Washington Navels, Lisbon and Eureka Lemons. Guaranteed true to name. No better trees in this State. Lowest market price. Three-year buds, four-year roots. Horticultural Commissioner's certificate. Order early, as good trees are scarce. Inspection invited.

E. G. Wood, Owner, at Nursery or Room 732 Huntington Building, Los Angeles, Cal.

BY ERNEST BRAUNTON, LOS ANGELES, CAL.

TIME TO MAKE SELECTIONS.

This is the month when catalogues come with their tempting array of new flowers; when we wish for a long purse so we can buy all the lovely things they contain. Some of the beauties we think we must have, and now is the time to select and plant the garden of 1906.

CHANGE IN RURAL SCENERY.

The demands of improved farming which require the cutting of scattering field trees and the clearing or dispensing with fence rows are rapidly denuding the older farming sections of much that formerly gave character and beauty to the landscape. At the same time, extension of electric lines is pushing the suburban home far out and bringing new elements and possibilities into the country landscape. These same trolley lines bring hundreds of homes into new prominence. Many a quiet country home is suddenly brought under the critical observation of hundreds of travelers in a single day, and the bareness and landscape poverty of some of these homes is sickening.

NATURE STUDY.

Should there not be such a course of study for our schools as will serve the best for acquiring knowledge, providing dicipline and in assisting the child, his teacher, and his parents in determining what his vocation should be? Every branch of science is in some way represented in the environments of the child reared in the rural districts. The study of agriculture embraces nearly all of the natural sciences. Neither of the last statements warrants the use in elementary schools of the so-called nature work to that degree that the study of plant life should stand out clearly as botany nor that the study of animal life should be so systematically taken up that it might be mistaken for college zoology. If the pupil is aided in securing the names of objects and a few facts about them, there is little need for anxiety. If the habit of observing is formed in the elementary grades, the work in the high school becomes a great pleasure to the pupil and teacher. In the high school investigation and experimentation is added to observation; here classifications are made and relations discovered and studied.

OUR VALUABLE CONIFERS.

Three of our pines, the great sugar, yellow, and Jeffrey pines—all very valuable as timber trees—are the largest and tallest of the family of pines, often over 200 feet in height and 10 to 12 feet in diameter, larger than any foreign pines. Five of these pines bear longer, or heavier cones, with larger seeds, than are found elsewhere. The sugar pine—our forest queen, located on the middle heights of the Sierras—often has cones pendant, laden with seeds, fifteen inches to two feet long.

The Coulter pine of San Bernardino and contiguous mountains bear cones weighing eight or ten pounds. The gray-leaf pine, bordering the Sierra foothill regions, bears cones three to four pounds in weight. The Torrey pine, limited to the high bluffs near Del Monte to 20 miles north of San Diego, yields cones two pounds and over in weight.

Two of our native spruces attain enormous height and dimensions. The graceful Douglas spruce of the Sierras and Northwest grows from 300 to 450 feet high, with a trunk often 8 to 12 feet in diameter. From this tree are made telegraph poles, fence boards, railroad ties, piles for wharves, and piles to be placed under the foundations of heavy buildings in partially made lands, masts for ships (foreign and domestic), and most of the flooring and studding for buildings. A spruce in the San Bernardino Mountains bears a cone five to seven inches long and three to four inches thick—the largest of its kind known.

Our two world-renowned redwoods often can be found 300 to 320 feet in height, with a diameter of from 20 to 35 feet, still growing and bearing aloft their noble crowns—not exactly hoary, even after reaching three to five thousand years. These two species of redwoods—commonly so called—the sequoias—are the only two survivors on the face of the globe, but the fossils of the coal deposits reveal about fifty extinct species.

AGRICULTURAL CLUBS IN RURAL SCHOOLS.

There has been a decided movement in rural schools in the last few years toward educating children in the common things of every day life. This has resulted in some states in adopting nature study work; in others, in the including of elementary agriculture among the studies taught; and in others, the pupils have organized, under the direction of the teacher or superintendent, into clubs for the purpose of learning about the things which surround the child on the farm.

The object of the work is to teach and to interest the children of the rural schools in plant and animal life; to teach them to appreciate the beauties and opportunities of country life. Last year there were 375,000 children in the rural schools of Ohio. The education of the majority of these children will end with the rural school and a very large part of them will remain in the country to make the agriculture of the future. They will have to deal with the farm crops, the farm animals, the weeds, the birds, the insects, every day of their lives; and the object of the College of Agriculture is to get them interested in these things; to teach them about them. It is not proposed to replace any of the studies that are now taught, but to form clubs which will serve as an adjunct to and supplement the work that is now being taught.

The first essential in taking up the work is that the teacher shall be in sympathy with the work and will encourage and assist the pupils in their club, and the success of the movement will depend upon the teacher. Pupils are naturally interested in the things with which they are constantly associated and only need the encouragement of their teacher to take up the work enthusiastically. The most ideal condition for the work is to be found in the centralized township schools. Here the pupils of the township are brought together and enough of them who would be glad to take up the work can easily be found to form a club. In the district schools of townships having a township superintendent, clubs may be organized as a township club with members from the different schools. In the district schools, which do not have any township supervision, and this class represents the larger part of the rural schools, clubs may be organized by the teachers and even though they only have four or five members the first year, it will be found that efficient work can be done, and if successful, many more will want to take it up another year.

STERILIZING GREENHOUSE SOILS.

Sterlization of the soil by heating is a very effective means of preventing or controlling the worst enemies of greenhouse plants, and this method is now used with success by many large market gardeners. The method is especially effective in case of lettuce drop, timber rot of cucumbers, Rhizoctonia of lettuce, cucumbers, etc., damping off, and nematode root disease, all of which are common diseases in greenhouses. As would be expected, the treatment is effective only with diseases transmitted through the soil and is without influence on diseases disseminated through the air.

Soil sterilization has been practiced on a small scale, mainly for experimental purposes, for many years, but its application on a large commercial scale has been quite recent. Attempts have been made to apply the method out of doors, but it is mainly applicable and is used with most success in greenhouses. Various methods of sterilization and forms of sterilizing apparatus, using either steam or hot water, have been proposed and tried. If hot water is used the treatment must be repeated each year; if the steam treatment is thoroughly applied it is said to be effective for several years.

THEODORE PAYNE
SEEDSMAN AND NURSERYMAN
HAS REMOVED TO
345 SOUTH MAIN STREET
HEADQUARTERS FOR SANTA BARBARA SALT-BUSH (ATRIPLEX BREWERI)

PRECEDENCE.

"I don't see why they should stick such an ugly thing as you right in front of me," complained the rose at the flower show.

"Age before beauty, my dear," replied the century plant, gallantly.

GET YOUR
SEEDS AND PLANTS
FROM HEADQUARTERS
Now is the time to send in your orders. Send for our SPECIAL OFFERS on your wants, especially in
PERENNIAL PHLOX,
CANNAS, DAHLIAS,
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and hundreds of other hardy Perennial Plants. This is also the season to plant Pansies, Asters, Poppies and all annuals.
SEND FOR CATALOGUE
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THE "BOSS"
TREE PROTECTOR
Made of Yucca Palm
Is cheap, durable and quickly put on the tree. It prevents Rabbits from destroying your trees. A sure protection against frost, sun-burn, grasshoppers or dry winds. can be easily removed; will last for years.
Send for samples.
PRICES
12 inch long, $ 9.00 per 1000
14 inch long, 10.00 per 1000
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Agents Wanted Everywhere
YUCCA MANUFACTURING CO.
2124 Willow Street Los Angeles, Cal.

If You Knew You Could Double Your Crop and Enhance Its Quality by Securing Plump, Fertile and Sure-Growing Seed, You would Do It Immediately.

If you will favor us with an order for any of the following sure-growing vegetable seeds, which we are offering at prices within the reach of all, your hope will be realized:

ONIONS—Prize-Taker. Pkt, 5c; oz. 10c; 1-4 lb, 40; lb, $1.35.
LETTUCE—Curled Simpson. Pkt, 5c; oz, 10c; 1-4 lb, 25c; lb, 75c.
CABBAGE—Extra Early Eureka. Pkt, 5c; oz, 10c; 1-4 lb, 35c; lb, $1.25.
BEETS—Improved Blood Red. Pkt, 5c; oz, 10c; 1-4 lb, 20c; lb, 50c.
CARROTS—Ox Heart. Pkt, 5c; oz, 10c; 1-4 lb, 20c; lb, 50.

If you plant these seeds you will get results in bounteous crops which will prove a pleasure and a profit.

F. Gilman Taylor Seed Co.
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THE ANAHEIM EVERGREEN NURSERIES
Tim Carroll, Prop.
Anaheim, Orange County, California
The Oldest Nursery in Southern California
Established 1868 by the Present Owner.
Palms, Pines, Acacias, Cypress, Camphors, Eucalyptus, Guavas, Budded Loquats and all kinds of Ornamental Trees. Be sure and visit the Nurseries. A cordial invitation to all. Nurseries, 200 yards west of Loara Station, S. P. R. R. Our fine Illustrated Catalogue free. Write for it.

In the Vegetable Garden

POTATO SCAB.

The potato scab can be readily and cheaply controlled.

Corrosive sublimate is the best remedy known as yet. Bordeaux mixture is promising.

Ground once infected with scab will retain the germs for several years and treating the seed for such ground will not be as effective.

The treatment causes not only a more salable product, but within proper limits an increased yield.

Corrosive sublimate, 1 part to 2,000 seems to be as effective as 1 part to 1,000. The latter strength is preferable as the solution gradually loses strength.

The best length of time to soak the seed is about one and one-half hours. A longer soaking may lessen the scab still more, but it reduces the yield.

VEGETABLES IN SCHOOL GARDENS.

Much has been said about the school garden as a factor in teaching elementary agriculture. The average farmer boy is pretty familiar with gardening operations before he has been long in school and he knows quite well what a good garden is. It will be very difficult for him to come from a fine garden at home with very much enthusiasm to a small patch on the school grounds, exposed to the depredations of uninterested or malicious schoolmates.

If he wants a garden of his own he can have it at home for the asking, where conditions are such as to insure success. But if he is required to grow a garden on the school grounds against adverse conditions he will be pretty sure to rebel very effectively against the task. Then, too, the country children who are old enough to understand instruction in agriculture are beginning to take great interest in the larger operations on the farm.

What then shall the country school garden be? First of all a place for experimentation and illustration regardless of the value or quantity of the things produced. We may grow vegetables without having a vegetable garden and learn from them many interesting and profitable things. A grass garden containing a large variety of cultivated grasses and forage crops would not only be instructive to the children, but would be a valuable object lesson to the whole community.

New varieties of fruit may be purchased and set out in the garden where they may be tested for the whole school district. This would save many dollars now wasted annuallv by farmers who buy novelties that are loudly advertised by the traveling agent, but which usually prove to be worthless. The setting of trees, vines, shrubs and bush fruits would afford valuable lessons to the children, as would their subsequent care, training, pruning and protection. Grafts and cuttings could be made in the winter and set out in the spring, thus teaching the art of propagation. A few simple outdoor experiments, touching on soil texture, soil moisture, fertilizers and soil inoculation could be performed here.

SOIL INOCULATION AT SCHOOLS.

Children can see the tubercles on the roots of plants as easily as grown people. They can also see the effect of tubercles on the growth of plants and can imagine the presence of microscopic organisms fully as easily as grown people. What more does any man know about the subject unless he is a specialist in the use of the microscope and in knowledge of bacteria? Such a mystery, the results of which can be easily seen, is just the thing to place before a child to arouse his wonder and interest and to make him an enthusiastic observer and experimenter. It is the commonplace things that everybody knows that children soon tire of and that should be avoided. In this work the garden may be used for the purpose of bringing insects near to the school house for purposes of study. Thus, while we would not care to try to produce a crop of cabbage or potatoes on the school grounds, we would want the plants in our garden so that we could easily study the cabbage worm and potato beetle. A great deal of the value of the fruits in the garden would consist in the fact that they would bring their insect enemies and fungous diseases close to the school where they could be studied very profitably.

POPCORN EAST AND WEST.

The growing of popcorn is not general. It is in a sense a special crop, and like all special crops it is grown usually in certain centers which are known to have a more or less marked adaptation for its worth. While popcorn is grown in centers both east and west, some difference prevails in the methods followed. One would imagine also that there would be considerable difference in the net profits owing to the amount of fertility which the eastern growers usually apply to land and to the greater labor which he usually spends upon the crop.

In the West popcorn is more frequently grown in rows or drills, and is cultivated but one way. In the West it is in a manner necessary to plant it in squares in order to give the necessary cultivation to the land which is likely to insure a good yield. If good crops are to be obtained on New England soil, for instance, everything has to be done by way of cultivation that can be done to stimulate growth in the crop, otherwise the yield will not be sufficiently abundant. The western grower may get a fairly good crop of corn though growing along with a fairly good crop of weeds owing to the nature of the strong character of the soil. Of course, the weeds that are thus present make it all the worse for the next crop or crops, but they do not greatly reduce the yield of the crop that is being grown.

The eastern grower applies in some instances as much as 1.200 pounds of fertilizer per acre; while the western grower usually applies none. One almost wonders how there could be competition under such conditions, but it ought to be remembered that the market in the East is somewhat better than in the West, and that the eastern grower is more willing to put ample work on the crop than the western grower.

Of course, the number of growers of popcorn will always be relatively limited. While it is used to a considerable extent, yet the amount required in proportion to that of ordinary field corn in infinitesimally small.

It can best be grown on good, clean clay loam or sandy loam, the latter to be preferred when it is possessed of sufficient fertility. The crop can be kept clean more readily when it is planted in hills, the hills being square; hence, all things considered, this method of growing it is to be preferred to all others. One would naturally suppose that the yields would be much less than those obtained from other corn, and yet if the hills are not placed more than three feet apart each way anl if a reasonable number of stalks are left in each hill, a good crop should yield from 75 to 100 bushels per acre.

Strawberry Plants
"Saltzer Everbearing," $3.50 per 1000; also Divided Arizonas, $3.50 per 1000.
F. M. Williamson, R. F. D. No. 1, San Diego, Cal.

BRANDYWINE PLANTS
Brandywine Strawberry Plants for sale, Kellogg's strain. No better nor thriftier plants grown. Clean of all disease; at bottom prices.
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IMPROVED GARDENA DEWBERRY
And all other kinds of Berry Plants.
Nursery Stock for sale.
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Saltzer Everbearing, $3.50 per 1000
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For Sale. 100.000 Excelsior and 300,000 Brandywine. Stock direct from R. M. Kellogg last April. Also Red Raspberry Plants.
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100,000 Brandywine Strawberries (Kellogg strain) $3.00 per 1000. 50,000 "A 1" Strawberry Plants, $3.00 per thousand.
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All raised on virgin soil and first-class plants.
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STRAWBERRY PLANTS
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The very best Brandywine stock at low prices for sale by the grower,
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BURBANK'S
Crimson Winter Rhubarb
OUR SPECIALTY
$1.50 per dozen, $7.50 per 100, $50 per 1000
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BRANDYWINE "A I" **STRAWBERRIES**

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Strong Growing, Thrifty Plants for sale. Brandywine Plants direct from Kellogg Strain. The "A 1's" are the newest and best introduction of fall bearing berries known.
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THE WELL-KNOWN
Seed Growers
FORMERLY AT SANTA CLARA, ARE NOW LOCATED AT
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and are prepared to sell their seeds in any quantity, wholesale or retail.
Headquarters for ***Onion*** seed and all kinds of vegetable seed.
Also ***Sweet Peas*** and all kinds of flower seeds.
Also ***Alfalfa*** and all kinds of farm and field seeds.
Seeds of the Highest Quality Only
Write for Handsome New Illus. Catalogue

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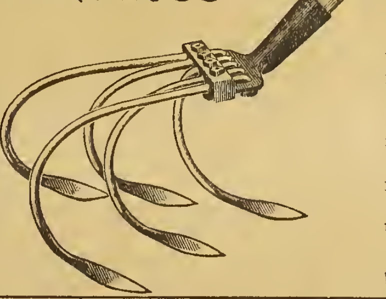

An Adjustable Garden Cultivator or Spring Tooth Hoe,
One of the most perfect tools for the cultivation of all kinds of garden plants ever offered the public.
OVER 100,000 IN USE.
It retails at $1.50 and is worth that price every day used in ONIONS, STRAWBERRIES, and other small plants.
It is adjustable in width by sliding the top plate.
It will work between rows or center blade can be removed and straddle row.
If not at dealers sample tool will be sent on receipt of price.
An Agent wanted in every locality. Most attractive terms to Agents and Dealers.
IRA D. BROWN
Western Distributing Agent, San Fernando, Cal.

Greatest National Bank West of Denver and South of San Francisco
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United States Depository for Government Funds
CAPITAL, $1,250,000.
SURPLUS AND UNDIVIDED PROFITS, $2,860,000
We are prepared to extend to the small depositor the same personal and careful attention that we do to our largest accounts.
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Responsible subscribers will continue to receive this journal until the publishers are notified by letter to discontinue, when all arrearages must be paid.

When ordering a change in address, subscribers should be sure to give their former as well as their present address, in order to insure desired change.

Date on wrapper or on address slip shows time paid to, thus: John Smith, 1-04, means subscription is paid to January, 1904

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In regular reading matter type the following charge will be made:

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Friday, Jan. 12, 1906

The Los Angeles office of the Cultivator has been moved to 115 North Broadway, (upstairs.)

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The reclamation of millions of acres of Western lands by irrigation is no longer a sectional issue; it is a national one. It is time that the subject should receive that attention its importance demands. It is legitimately the work of Congress. That body should attend to it.

* * *

What the President Might Do—Suppose the president had followed the advice of the tariff reformers, who are seeking without judgment, to have all our schedules remodeled, and had recommended to congress in his message the repeal of the many things advocated by these disturbers, as for instance the schedules in the Dingley law relating to hides and coal which the governor of Massachusetts demands shall go on the free list.

And suppose that Canadian farm products should be permitted to come into the United States and to "mingle with our American products," as practically advocated by Governor Cummins of Iowa, in his inaugural address two years ago.

And suppose an effort should be made to strike down the trusts and monopolies by a general assault upon the tariff, removing duties from all things made by monopolies.

And suppose sugar from the Philippine islands should be put on the free list, the labor in producing such sugar being furnished by Chinese, as advocated by a great many people.

And suppose the products of the Orient should be permitted ingress into our country free of duty, where would the California grower find himself?

Suppose all these things should be done as advocated by a great many distinguished men in public addresses and debates, what would the harvest be in a business sense?

We are ready to admit that changes ought to be made in the schedules of the Dingley law as it relates to certain commodities, which we do not produce in abundance but which are necessary to the possible comfort of our people. But the sweeping demands of our untutored tariff tinkerers go too far and their contention, if carried into law, would create a condition of industrial paralysis all along the line. Just stop and think:

Would everything continue to prosper as at present? Would labor continue to be fully employed, at an ever-increasing scale of wages, as at the present time? Would there be tremendous purchases of raw materials to be manufactured into products? Would farmers enjoy increased prices for produce? Would wool advance or decline? Would the rolling mills continue to run night and day, or would orders that have already been placed, be canceled, so far as possible? Would California, with abundant crops, continue to enjoy the prosperity she is now enjoying?

Business men who have memories ought to know what effect sweeping tariff revisions, let alone tariff agitation have upon business. Some of them may have forgotten, but it stands to reason that no man who was engaged in business in 1895 has forgotten.

These questions are far above politics. The answer to them would effect business, the resources and home lives of our people. If the president should recommend general tariff revision, as endorsed by some of these wild conceptionists of tariff modulation on everything scheduled in the Dingley law, it wouldn't be six months before thousands upon thousands of our working men and scores of our factories would be out of employment.

The tariff reformers go too far in demanding the virtual abdication of the whole tariff system of the country.

* * *

Profits In Sugar Beets.—The value of the beet sugar industry to farmers is well illustrated in the case of a county in Idaho where a farmer bought a tract of land for $3,500. In a year thereafter a beet sugar factory was located within four miles of the farm purchased. "Much of the land on this farm was in alfalfa," says the Desert Farmer, "and the young man who purchased it preferred to keep it in alfalfa than to put it in sugar beets because so much more easily handled and at some less expense."

It seems, however, the owners of the farm were induced later to put part of their land in sugar beets and the first year the yield so far surpassed in profits what the owners had before received that they were amazed at the result.

They started by planting fifty-four acres in beets, contracting the labor to Japs, except the team work.

Now the Desert Farmer gives the output of the crop and the net amount it realized the owners. It says:

"The beets have just been harvested and yielded an average of 16 tons per acre, for which $3,888 in cash was paid the farmers. From this had to be deducted about $1,188 paid the Japs, leaving the farmers $2,700 for their labor. It is scarcely necessary to say that under these circumstances the farm for which they paid $3,500 could be readily sold for over $10,000."

This is only one instance where the beet sugar proposition has made individual farmers a handsome revenue. Around Grand Island, Nebraska, the farmers have been putting their land into sugar beets for several years, with the result that their farms have paid them from 25 to 33 per cent. greater profit than they did when sown to grain or planted to corn.

These are pointers which farmers located in districts approximate to sugar factories, may study carefully and act on accordingly.

* * *

Useful Information About Raisins—George Robertson has writen a very interesting article in the Fresno Republican which he styles "Some New Raisin Figures." In this article he treats of the present foreign demand for raisins, as compared with the demand in the past seven years, and shows that with one exception, the export trade has grown annually and that raisins are being used as an article of diet more generally today than at any time in the past.

"Some two months ago," says Mr. Robertson, "a report circulated in the press and by others that the reason for the stagnation in the rasin market and falling off in the demand for California raisins, was owing to the large importation of Spanish raisins. This may have been done to create a scare among raisin growers by interested parties, but to those who know anything about imports and exports it was absurd. The latest returns just received from Washington prove how false the statement was, as up to November 1st the imports of foreign raisins was only 2,065,851 more than the corresponding period of last year, an amount too small to have much influence on a crop of the magnitude of the California output. The amount so far imported is actually 2,052,057 less than the total imports for last year. The imports have varied but little during the last three years, averaging only a little over six and a half million pounds a year, against which we export California raisins to the extent of three or four millions, which reduces the proportion of foreign raisins imported to an unimportant factor in the situation. The year 1884 was the record year for foreign raisins, no less than 56,676,000 pounds being imported, but in that year the California crop only amounted to 3500 pounds. In the last ten years the imports have fallen off rapidly, almost in proportion as the California crop increased, and in the last few years the imports of foreign raisins have been in a great measure counterbalanced by the California raisins exported.

The value of the raisins imported last year was $236,080, the value of the currants $757,966; and the value of California raisins exported was $147,760.

The British colonies are our best customers for California raisins. Last year Canada took 2,613,637 pounds and British Australasia 761,141 pounds, or a total of 3,374,778 of the 4,020,418 exported. Mexico comes third on the list with 350,646 pounds.

* * *

The value of raisins as an article of diet, is mentioned by the writer of the article as becoming more generally acknowledged, especially in the treatment of tuberculosis. He cites the instance of Dr. Josiah Oldfield, who is not only a licentiate of the Royal College of Physicians and member of the Royal College of Surgeons, London, a D. C. L. of Oxford University, and a barrister-at-law of Lincoln's Inn, besides being the author of several medical works, stated in an interview in August last that vegetable and fruit juices were of the greatest value in the treatment of consumption, in its earlier stages. He says:

"I put raisins as the first of all foods that I know of. They are far superior to grapes, because the sugar has been thoroughly matured and ripened, and transformed ready for digestion." . . . "In addition to raisins, another valuable food is raisin syrup, not so-called raisin wine, but what is called in India 'Draksherash,' which is an Indian non-alcoholic wine made of raisins and a few spices."

The above extract should prove useful to cooks generally, and to housewives who desire to have healthy children.

Raisins have long been used, not only as food, but in olden times as a substitute for candy by the younger generation. The boys of Christ's Hospital, in London, a large and ancient public school, receive a packet of raisins annually, the funds for which were left by one Peter Symonds in his will, dated 1586.

And it might be added here that the hospitals in Chicago, New York and Philadelphia are using raisins more freely today than at any previous period. The demand for raisins is increasing.

* * *

Frost Protection—The orange growers of Florida have devised a simple protection for their fruit which appears to do the work at very little expense. It is known as "an emergency cloth green house" being in effect a green house heated artificially during only the few nights that frost and freezes visit Florida. All of the rest of the time the fruits and vegetables have every natural advantage afforded by Florida's usually mild climate, as the cloth covers are all brailed back and the skeleton framework does not interfere in the least with perfect ventilation and all of the sun, air, rain and dew that naturally fall upon an out-of-door crop are secured. In this particular the device is superior to glass greenhouses.

These emergency cloth greenhouses are so devised and constructed that they can be operated (closed or opened) at the rate of one acre per hour by two men. The cloth is so prepared by chemical treatment that its life extends over a period of from eight to ten years. The Chicago Packer sent a representative to Orlando Florida, to report on the device and he reports that he saw grape fruit, tangerines, pineapples, bananas, strawberries, string beans, cauliflower and lettuce, all flourishing under this system and some of the most delicate vegetables being started at a time when it would be folly to attempt them out of doors.

It might be well for California orange growers and vegetable raisers to look into this device, for although we have, very seldom, any use for it, there might be a necessity some time when it would repay its use many times.

Tender garden stuff especially could be protected.

NEWS OF COUNTRY LIFE IN THE GOLDEN WEST

HORTICULTURE.

The Kings County Agricultural Association held a meeting the first of the year and set the first week in October as the time for holding the next fair.

The Enterprise says, the orange growers of Riverside made a literal wall of fire around their orchards during the late cold nights and thus saved their crops.

About 1900 rooted vines and cuttings, shipped from Fresno by Dr. G. A. Hare, have been stopped at Cutler by the horticultural commissioners, on account of the phylloxera scare.

Dispatches to the Riverside Press from every orange growing section south of Tehachapi, gives the orange output this year at 22,970 car loads. Lemons 3770 cars. Very good for an off year.

Ellwood Cooper of Santa Barbara has offered to rid the state of Massachusetts of the gypsy and the browntail moth pests for $25,000. That is reasonable enough if Massachusets has the real thing.

A number of packing houses of Redlands have decided to close down for a while in order to avoid competition with the frostbitten fruit which is being shipped out from other localities in large quantities.

Orange thieves in Colton have been vigorously pursued ever since the Colton Fruit Exchange has offered $2 reward for each person caught in the act of stealing oranges from the groves of members of the Exchange.

The Santa Fe railroad officials have had a man out, who visited every orange and lemon growing district in Southern California, and returns with the report that very little, if any, damage may be looked for from the recent frost.—Ontario Record.

Butte County citrus growers are making the claim that their trees stand more cold weather than those in Southern California, and instance the last cold wave as proof of the assertion. No damage to speak of was felt when the temperature got down to 26 degrees.

The apple growers and peach growers of this county are to have instruction on the 18th and 20th of this month from Prof. W. L. Clark, the specialist on diseases of these trees. On the 18th he will be at Toluca where he will advise on the peach worm, and on the 20th he will meet with the apple growers at Los Angeles. He is an authority on the pests which infest these trees.

A vegetable grower at Gardenville, this state, claims to have propagated a new variety of watermelon, which can be kept through the fall and winter in the same manner in which potatoes, onions etc. are preserved. He claims the melons are luscious during midwinter as in the summer. He claims to have a cellar full now that are very fine, but it sounds like a "pipe dream" and it is not likely that the winter markets will soon be over stocked with watermelons.

The Chicago Packer accounts for the poor sale of California peaches last year on the ground of their being picked and shipped green. It says: "During the past season California Salway peaches were shipped greener even than usual, and often while they were selling in eastern auction markets for hardly more than freight and refrigeration, Colorado and other eastern peaches were bringing over $1 a box; and we all know that a California Salway, left upon the tree until hard ripe, is an excellent peach to eat. Could they have been delivered in that condition in eastern markets, the results would have been satisfactory.

AGRICULTURE.

The Oxnard Sugar Company expect to put 18,000 acres in beets this year.

Thirty-one sacks of canteloupe seeds, amounting to over one and one-half tons were in Colton one day last week enroute from Rocky Ford; Colorado, to Brawley.—Colton News.

The Watsonville Register is boasting of a Pajaro pumpkin that weighs 225 pounds. Its greatest circumference is 101 inches, and it will make 1000 pies.

The Spreckles Sugar Company has made a liberal proposition to the landowners around Salinas, offering to construct and maintain a pumping plant to furnish water for irrigation if one thousand acres be pledged for ten years to be put in sugar beets.

The amount of sugar manufactured is over 25,000 tons as the beets showed a high percentage of saccharine material. During the season's run 530 men were employed at the factory, and 150 will be needed to clean up the machinery and put it in trim for the next season's campaign.

The Spreckles Beet Sugar Factory, near Salinas, made the following record during 1905: Began slicing beets, Sept. 20; Finished slicing Dec. 9; tons of beets sliced, 170,000, of which the various localities produced as follows.

Salinas valley, 126,000 tons; Pajaro valley, 23,500 tons; Santa Clara valley, 14,000 tons; San Juan valley, 6,500 tons.

The American Beet Sugar Company at Oxnard has been receiving large quantities of beet seed the last few days from Germany, and more is coming. The company figures on receiving 3600 bags of seed approximating 110 pounds to the bag, to use around Oxnard and to be sent to Chino. This makes over 300,000 pounds of beet seed to be sown about those two communities.

The Coachella Valley Producers' Association shipped 187 carloads of melons last summer from Coachella, says the Chino Champion. These melons were grown on 690 acres, of which 529 were at Coachella, 107 at Durbrow and 54 at Mecca. These shipments brought gross receipts of $191,258.59, or net to the growers $101,8295.50. The gross value of the watermelons shipped by the association amounted to $8833.17 and of grapes, $2450.85 gross, making the amount sold by the association $202,550. Out side of the association there was sold about $20,000 worth, making in all over $220,000 sold from Coachella alone.

LIVE STOCK.

Mills Bros., of Hanford shipped 4,000 head of fat cattle to San Francisco last week.

San Jacinto's new creamery has been finished. It is owned by Dr. Groeff and W. M. Carlin of Los Angeles.

Fred. Hansen of Escondido is one of the most successful poultrymen in the state. He now has 2000 fine birds in his yards.

Eureka, it seems is to have a creamery that will be about as big as any in the state. It will be big enough to turn out about 20,000 pounds of butter a day.

An epidemic of glanders has caused an official killing of $50,000 worth of horses in Vancouver in two months. About one-third of all horses in the city have been shot and cremated.

The Porterville Enterprise states that a number of horses have died in that city lately, and their deaths are said to have been caused by eating hay that became "rusted" last season.

The America-Mexican Cattle Company has been organized in Los Angeles recently with a capitalization of $250,000, to handle a large cattle business in Antelope Valley, in California, Arizona and Sonora.

The immense sand bar which had formed at the mouth of the Russian river and which prevented salmon getting into that stream has been blown open with dynamite. Great quantities of salmon are now running into the river.

The Los Angeles Creamery Board of Trade for the ensuing year will be composed of A. C. Smithers, C. H. Sessions, J. E. Platt, R. R. Briggs, F. J. Peacock, P. Rabb, H. Michel, R. W. Davis, T. Crawford, W. P. Hage, San Diego, an O. J. Weber. Among those who attended were H. A. Bingham, J. Bartlet, H. Burr, J. O. Sullivan, H. Davis, J. W. Chase and J. Wilson.

Exulting over the progress Northern California is making in industrial development, the Alameda Encinal says: "There are many dairy centers in the Middle States that turn out from 20,000 to 30,000 pounds of butter a day, and there is no reason why this new enterprise at Eureka should not be the forerunner of others on an equally large scale. What with beet sugar factories and creameries Northern California is rapidly making good its deficiencies."

The total production of butter in California in 1905 was 41,961,047 pounds. With but few exceptions, there was an increase in the output in every county. The increase over the production for the previous year was 17 per cent., placing California in the front as a dairy state. The remarkable growth in butter output shows a gain in five years of 211 per cent, the greatest gain being made in the counties located in the San Joaquin and the Sacramento Valleys, their remarkable progress being the best proof of their adaptability in the way of profitable dairying.

MISCELLANEOUS.

San Francisco is to have 75-cent gas.

The next State Teachers' Convention will be held at Fresno.

The beautiful little town of Dinuba has been incorporated as a city of the sixth class.

The San Francisco gas and lighting works have been sold to the Standard Oil syndicate.

Conductor Neff will announce the dates for several institutes in Southern California in a few days.

The next meeting of the National Educational Association will be held at San Francisco July 9 to 13, 1906.

Merchants and other business men of Salinas say that this year's after holiday trade is the best they have ever had.

The News says: The Carnegie library site is the all-important subject that is now agitating the minds of Fullertonians.

Congressman Knowland has introduced a bill raising the head tax on aliens coming into the United States from $2 to $25.

The Hanford Sentinel reports the fact that Kings county is out of debt having paid on January 3, the last obligation owing by the county.

There is more snow in the mountains of Kern County than ever before known at this season. The result will be plenty of water later.

Many of the property owners of Watsonville have at last decided to remove their front fences. This is the result of civic improvement agitation.

Automobile and team routes have been established between Tulare and the fields of colonization work at Corcoran and in the Angiola country. They are doing a large business.

Citizens of Claremont, Uplands, San Dimas and Lordsburg have appointed committees to work up interest in the proposed extension of the Pacific Electric from Monrovia through to Uplands.

The Santa Paula Chronicle reports Ex-Senator Thomas R. Bard, who was seriously injured a little over two weeks ago by being thrown from his carriage, as slowly but surely recovering.

Workmen excavating for the Southern Pacific grade in the vicinity of Watsonville have discovered quite a stock of petrified "remains" of animals, resembling the mastodon of pre-historic days.

The Directors of the Pomona American National Bank voted to give $50 to the Fruit and Flower Mission and the same amount to the Women's Relief Corps, both of which organizations are assisting materially in caring for the poor people of the city.

Fuel oil from the oil wells of California and Texas is replacing coal upon the railroads of California, Arizona, New Mexico, Texas and Mexico to such a great extent that coal operators in New Mexico and other coal fields of the West are becoming alarmed.

Senator J. E. McComas has presented the Pomona Public Library with one of the most interesting and valuable documents from a historical standpoint possessed in this city. It is an abstract of title to lot 2, block 45 or the San Jose rancho upon which the city of Pomona now stands.

In its determination to enforce the compulsory education law the San Bernardino City Board of Education has empowered the president of the board to appoint an attendance officer whose only duty will be to investigate causes of absence, and to arrest truants between the ages of 8 and 14 years.

President Diggs of the Sacramento Valley Development Association has been advised by Secretary W. A. Beard, that the Federal Agricultural Department is willing to send four expert persons to California for a period of ten weeks to labor for the extermination of the pear blight in the valley. The cost will be about $1200.

Last week was the coldest weather ever known in Southern California, the mercury registered as low as 23 degrees. The orange crop was badly injured and it is feared many of the trees were killed, as 26 degrees is as low as they are supposed to stand. Many palm trees and other plants that were many years old were killed and flowers and vegetable gardens that were never frostbiten before were entirely destroyed.—Ukiah Times. Oh what a whopper! There was frost all right, but no such damage as reported by the Times.

SILAGE.

W. S. Fraser, in a late bulletin of the Illinois Experimental Station, discusses the advantages and value of silage, the crops best grown for the porpose, the time and method of harvesting them, and the essentials of silo filling. Records of the cost of filling the silo, kept by the station on 19 different farms in various parts of the State, show a range of from 40 to 76 cents per ton, the average being 56 cents.

OUR CITRUS CROP.

The 1904-05 crop of citrus fruits in California broke all previous records, the shipments for the year ending October 31, 1905, being estimated at 31,422 carloads, or 11,105,864 boxes, as against 29,399 carloads, or 10,701,210 boxes, for the same period in 1903-4. Of the total given for 1904-5, 26,044 cars were oranges and 5,378 lemons.

The bulk of the crop is furnished by Southern California, the shipments from that section being 29,592 cars for the past season, but northern and central California show a steadily increasing output.

LINERS

WALNUT TREES FOR SALE.—I HAVE 8000 2-year Santa Barbara Soft Shells which I will dispose of at the very lowest price. A. J. HIXSON, Burbank. Cal.

FOR SALE—TWO THOROUGHBRED Scotch Collies, sable and white markings, 1 and 2 years old, and a pup 8 months old. Price $10 each. These dogs are among the best bred on the Coast. HUGH CONWAY, Saticoy. Cal.

FROST PREVENTION—FOR SALE AT half price, 400 Froude Patent Oil Fire Pots in good condition, used only once, part of them not at all. No further use for them. Also Electric Alarm Thermometer and fixtures. C. H. LOCKWOOD, Burbank, Cal.

C. H. SESSIONS, ASSOCIATE EDITOR

BETTER RAISE THE COWS.

It is not good practice to buy cows as they are frequently short milkers, have not been educated to give milk ten months in the year. It requires a good deal of time to get them accustomed to new surroundings and conditions and they not infrequently possess undesirable qualities, are kickers, unruly, vicious, etc. There is also danger of bringing tuberculosis and other diseases onto the farm. It is expensive and unsatisfactory for usually something is the matter with the cows offered for sale.

It is better to raise a herd than to attempt to buy one. One has the advantage of knowing about their ancestry and whether they are good performers or otherwise. There is the chance to raise calves from cows that are well bred and good producers. Seldom will any man sell good cows. The buyer has to take the culls or pay a price which places good cows beyond his reach. Much valuable time is lost in buying and selling many cows in the endeavor to get a few good ones. Breed from the best cows only, test them and find out just what they are doing. Raise the heifer calves from the best cows and when old enough, breed them to the best pure-bred dairy sire you can get. Test the heifers from this cross when they come in milk and breed them in turn to a sire strong in dairy blood. In this way any man can have a herd in a few years that will be a credit and that will make money for him.—Wis. Agriculturist.

HORSES IN DEMAND.

F. C. Hanson of Portland, Oregon, who made a trip through the western country in quest of draft horses, gives his opinion that the scarcity of farm horses is greater today than at any time in years. He urges farmers to engage in horse raising as a profitable business.

The demand for draft horse and for mules is very keen, he says, and the government in the Philippine Islands and the miners in Alaska will also draw heavily on the market.

"The desirable stock on the coast has been practically cleaned out," continued Mr. Hanson, "and buyers in the Pacific Coast cities and for government contracts must look to Montana and even as far East as the Dakotas for their supplies."

"The days of the cheap horse in the Northwest are over. I remember a few years ago when great bands of horses roamed the plains of eastern Washington and were considered not worth feeding. Thousands died in winter on the range. This condition has disappeared, owing to the demand for good horses in Alaska and the Philippines, to say nothing of the requirements for heavy trucking, delivery, etc., in the big cities.

"On the Coast we would get more of the Montana and Dakota stock but for the fact that in Chicago and Kansas City the demand is very heavy, and big teams are now selling for double the money they brought a few years ago. In Illinois, Kansas and Nebraska the farmers who raise high-grade Percheron and other draft types get $500 and $600 per span, four years of age, as quick as they are brought to market. The big concerns grab them up rapidly. The same is true of mules of the heavier type, which sell like hot cakes in the cities of the middle West.

"As long as this condition prevails, the stockmen who raise horses in the Pacific Northwest will demand higher prices. Alaska's need will be greater every year, and the government is in the market regularly for horses for the Philippines."

COWS SHOULD BE BETTER BRED.

Judge Shields of Sacramento has this to say about better breeding of dairy cows. It is exactly in line with the views expressed by the Cultivator time and time again.

Dairymen should be educated to bring up a better grade of cows. There should be better blood, which would result in better milk being produced. What is needed is education in the dairy business. Dairying in California is extremely crude; in fact, the cows are unproductive in milk and butter. The remedy for this is the introduction of better blood in the dairy cattle. California is behind any other State in number of thoroughbred dairy cattle. Referring to the chances for agricultural education at the State University, Judge Shields says the equipment at that institution is not what it should be on account of the failure of the legislature to make sufficient appropriations. It will be necessary to inaugurate a campaign having for its object the securing of sufficient money by legislative enactment for educational work in the State University in connection with the dairy industry.

GOAT MEAT FOR SALE.

G. C. Babo of Colfax, Cal., in American Stockman: I am in the goat business and like to read the experiences of the goat men. I have grade goats from seven-eighths to short hair. I have been in the goat business two and one-half years and have at the present time 1,200 head. I shear twice a year on account of brush and accidents with my goats getting caught in barbed wire and on account of keeping them healthy and free from lice.

I dip once a year, after shearing, as I think there is nothing comes nearer to cruelty to animals than to allow goats to get lousy, and would advise every man in the goat business to dip—regardless of cost and inconvenience. When I had only a few I used a barrel filled one-half full of dip. I took a small rope, made a slip noose on one end, that I put around the goat's hind feet and put him in the barrel. I used a common sugar barrel, and since I dipped the first time and saw the benefits I have thought if I only had one goat I would dip it. I have so far found sale for all my kids by killing and peddling.

When I first started to kill I went to the butchers and tried to sell to them. They said the people were prejudiced against goats and would not eat them.

So I commenced to kill and peddle—and in our town and surrounding neighborhood I have had as high as forty orders at one killing. I sell at 10 cents a pound, give hind quarter one week and front quarter the next to my customers, and there is no complaint. Kill every Saturday, and if I forget a customer he is as mad as a hornet.

Every man that is in the goat business should do all he can to introduce the meat, and as soon as people try it they call it the best of any domesticated animal there is. It is certainly entitled to the name "Angora venison." We tan some of the skins, and they certainly do make the finest rugs there are in the United States. It seems a question with some men in regard to goats living on brush alone. Now, I am on a range where there is practically no grass, and my goats are the fattest I ever saw. Most of them have their kidneys entirely covered, and a great many of my customers claim they are too fat.

There is no question about them being fond of weeds, for they are great lovers of weeds and brush.

PROBABLY FEVER THE CAUSE,

J. F. S., Santa Rosa, wants to know why his cow does not come in heat again since calf was dropped in September. There are several causes which produce this condition. The one of the most general is fever in the womb producing unnatural conditions. The cow should be fed regularly, kept from chilling at night, and in all probability the matter will correct itself. The hens you write about probably need meat once a week.

Fine Holstein Bull

Young bull 22 months old: also 3 heifers 2 years old, good milkers, just freshened.

Raphael Bros., Moneta, or this office.

John Lynch Breeder of Registered **Shorthorns**

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P. O. Box 321 - Petaluma, Cal.

GEO. O. ROEDING, BREEDER OF HIGH-GRADE

Thoroughbred Holstein Bulls and Heifers

Thoroughbred Berkshire Boars and Sows

FRESNO, CALIFORNIA

Thoroughbred Poland China Swine and Black Minorca and Barred Rock Poultry

High grade stock of best strains Young stock for sale

M. BASSETT, HANFORD, CAL.

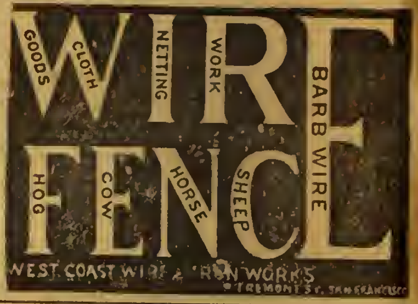
BERKSHIRE BOARS, All Ages

T WAITE, PERKINS, CAL.

The San Gabriel Valley Herd of

Ohio Poland China Hogs

Won 25 Ribbons, 2 Gold and 2 Silver Medals at State Fair at Sacramento, Cal., in 1904. The great imported boars, Chief Guy and Ohio's Chief, at head of herd Also Black Minorca chicken eggs in season. Stock for sale, also bred sow W. R McCASLIN & SON. Walsh Station, Sacramento County, Cal.



Put *Facts* and *Common Sense* to work on a Tubular Cream Separator and **you know it must be easy to operate.** Put *Facts* and *Common Sense* up against a back breaking, hard to wash, high can "bucket bowl" machine and **you can't make yourself believe** it is easy to operate. In the light of truth, the out-of-date, "bucket bowl" separators go to smash. Which kind for you, the

Tubular	*or*	**"Bucket Bowl"**
Low Can	*or*	*High Can*
Simple Bowl	*or*	*Bowl Full of Parts*
Enclosed Gears	*or*	*Exposed Gears*
Self Oiling	*or*	*Oil Yourself*

Catalog O-260 tells all about Tubulars. Write for it.

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we are placed in an advanced position to furnish the latest and best goods for every branch of the Dairy and Creamery business. The newest, the latest and the best always in stock. Our complete Catalogue mailed free.

DE LAVAL DAIRY SUPPLY CO.

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CONFINEMENT OF DAIRY CATTLE.

The last few years the policy of closely confining daiy cows during the winter, and even during the entire year, has grown in favor; upon the ledger and "milk check" this demonstration has found its proof. To the unwary and to the intensely practical dairyman these very tangible evidences are proofs enough; but to the far-sighted breeder the practice presents objections that seem to have a deeper importance than the casual observer may take notice of. The practical man in any line may work on with marked success though he be regardless and even ignorant of the deeply working fundamental principles that govern his occupation; yet his ignorance does not excuse him from facing abnormal conditions that offended nature may sooner or later impose upon his business as a result of his shortsightedness.

Impoverished farms in all parts of our country are certain results of rash methods with nature. Soil that has been building for thousands of years cannot endure the depleting extravagance and unreasonable culture of the present and the past. Neither can the constitutional vitality of man and animals stand radically unnatural conditions without consequent degredation. One after another our great prisons are being condemned as veritable snares of human life; this because man is constituted to breathe nature's pure air, not the contaminated vapors of absolute confinement.

The cow question, then, is whether dairy cattle may be subjected to entirely artificial conditions indefinitely and still preserve a health that is above suspicion. Not a few readers will recall the humid and vitiated atmosphere that they have encountered on opening the doors of a well-filled cow stable on a winter morning. To the closely confined cow this is often the constant condition.

The recent prevalence of bovine tuberculosis is attributed by many to close confinement. All the well-defined cases of this disease that have come under the observation of the best veterinarians have been traced to lack of proper ventilation of the stables where the cows are confined.

The best official herd test of Holstein-Friesian cows made in Ohio for several years was of six cows that spent the entire day in a barnyard and were stabled only at night. This test was conducted during the coldest weather of February, but the cows went out every day. The owner of these cows is a strong believer in his practice, and although his barns are in a large city, he never shuts the cows in except nights and bad weather.

It should be kept prominently in mind that the fresh-air cow is the vigorous cow, and the one that can transmit to her calf a constitution fit to carry with success and to perpetuate those estimable qualities and characteristics that the zealous enthusiast sometimes seeks to stamp in his herd where health and vigor of body are neglected.

GEO. P. WILLIAMS.

THE CATTLE WAR IN WYOMING.

The current number of the Outing Magazine contains a very interesting article from Arthur Chapman, in which he reviews the war among cattlemen which has been going on with more or less violence since 1892. The war has ben known as the "rustlers' war," and while it has raged many men and hundreds of cattle have been killed. The impression has been widespread that the fight has been between the honest owners of cattle on one side and an organized community of cattle thieves or "rustlers" on the other. But never was anything more misnamed, declares Mr. Chapman. To be sure there were cattle "rustlers" in Wyoming, and there is no doubt that they had become exceptionally bold. But it is doubtful if there has ever been a more lawless business than tl old-time cattle business since the world began. When the great cattle trails were opened some cattle owners started with a small herd at one end of the trail and arrived at the other with thousands of strange beeves that had been "picked up" on the way. Some of these men became cattle kings, and built grand houses, in which they were always uncomfortable, and even went to the legislature or to Congress. Beside them the rustler, who stole a few paltry head of cattle, must always remain a rather pitiable figure.

Considering the Wyoming cattle war from an unprejudiced viewpoint, it appears that the rustlers merely figured as an excuse. The main object of the cattle owners who invaded northern Wyoming with a half hundred professional man-killers seems to have been to drive out the small ranchers. Some of the men who had taken up homesteads in the heart of the cattle country were to be killed, and life was to be made so miserable for the others that they would take down their fences and decamp, and the threatened disintegration of the cattle herds would be postponed indefinitely. Had this plan been successfully carried out in Johnson county, no doubt it would have been made effective in other parts of the West where the settler was getting too strong a foothold. The cowboy would have been living his picturesque life on the open range today, but the growth of the agricultural West would have been set back a generation.

CARE OF CREAM.

Prof. E. H. Farrington in bulletin No. 129, of the Wisconsin Experiment Station under the caption "Some Creamery Problems," gives the following pertinent and timely rules for the care of cream on the farm. We commend these rules to dairy farmers that are using hand separators. The proper observance of them would greatly improve the quality of the products as well as the price of the same.

Place the separator on a firm foundation in a clean, well-ventilated room where it is free from all offensive odors.

Thoroughly clean the separator after each skimming; the bowl should be taken apart and washed, together with all the tinware, every time the separator is used; if allowed to stand for even one hour without cleaning there is danger of contaminating the next lot.

Never mix warm water and cold cream or sweet and slightly tainted.

Provide a covered and clean water tank for holding cream cans, and change water frequently in tank so that temperature does not rise above 60 degree F. A satisfactory arrangement may be made by allowing running water to flow through cream tank to stock watering tank.

Skim immediately after each milking, as it is more work to save the milk and separate once a day, and less satisfactory, than skimming while milk is warm, since the milk must be heated if kept to another milking.

Cream testing 35 per cent. fat or more is the most satisfactory to both farmer and factory. The best separators will skim a rich cream as efficiently as a thin one, and more skim milk is left on the farm when rich cream is sold.

Cream should be perfectly sweet, containing no lumps or clots when sampled and delivered to buyers.

There is a good demand for sweet cream, and it can easily be supplied by keeping the separator, tinware, strainer-cloth and water tank clean and the cream cold.

These recommendations, if followed, will pay well for what some may think is "a lot of extra bother."

PURE-BRED STOCK.

After having called attention to the relative number of pure-bred live stock to scrubs and grades in England and Canada, the St. Paul Farmer states that we have a much smaller per cent of pure-bred live stock to grades in the United States than is found in England, but that even in England where they have been improving the live stock for generations there is still a very large per cent of scrubs. In view of this fact, with reference to an overproduction of pure-breds in this country, the Farmer says: "Consequently long years will transpire before the proportion of pure-breds will be in excess of the needs of the country." The Farmer infers that since England has been improving her live stock for years and since there is still a large per cent of scrubs in that country, it will be many years before there will be an overproduction at home.

In a measure we agree with this proposition, yet we can see no reason why the statement should be made that it will be many years "before the proportion of pure-breds will be in excess of the needs of the country." We do not think the proportion of pure-breds will ever be in excess of the needs of the country. The more pure-bred cattle, horses, swine or sheep we have the better it will be. It is probably too much to hope that scrub will some day be done away with entirely, but such a condition would certainly be desirable. It is to be hoped that by the time the farmers in the United States have been breeding pure-bred live stock as long as the farmers in England have that our proportion of scrub and grade stock will be much smaller than it is in England at the present day.

It is stated that the proportion of pure-bred live stock in Canada to scrubs is larger than in the United States. There is one pure-bred horse to each 162 scrubs and grades; one pure-bred head of cattle to each 60 scrubs and grades, and in the case of sheep there is one to 30 and of swine one to 60. These figures show that Canada has a larger per cent of pure-breds to scrubs and grades than has the United States. In 1900 the Department of Agriculture estimated that the number of pure-bred cattle in the United States was about one per cent. It is to be hoped that when the next census is made we may be able to make a better showing.

Poodlv—"I'm going to marry a nice girl and settle down."

Boorly—"Why not marry a rich girl and settle up?"—Judge.

A GOOD STOCK FOOD.

Mr. Lidell from The Palms brings to our office, for identification, plants of the White Melilot or Sweet Clover (Melilotus alba), an escape of European origin.

Mr. Lidell states this plant grows in strongly alkaline soil and that his stock eat it with avidity. He wishes to procure seed from it for further planting, and says Los Angeles seedmen do not handle it. Who can aid him?

The Missouri Agriculture College, with a load of three-year-old Hereford steers won third prize in the Pittsburg Live Stock Show in competition with other feeders from all parts of the United States. The Missouri bunch was admitted to be the best of the heavy cattle shown, and had the judges not preferred younger steers would have undoubtedly won the first prize. They sold for $7.10 per hundred weight, bringing a little more than $100 each.

Advertising Column for Members
OF THE
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Organized for the general advancement of ersey interests, to extend knowledge of their uperior merits, for the mutual benefit of mem ers, and to increase the profitableness of one f the State's greatest industries. Breeders are equested to unite with the Association.

BULL FOR SALE

Having sold my ranch I am forced to sell Golden of Biltmore. 60082, a grandson of Golden Lad's. Golden of Biltmore is one of the best, ***if not the best*** sire on the coast several of his daughters less than two years old selling for over $200 each. Highest bidder for next sixty days takes him. If everything is not just as represented, I will give anyone the ***bull free of charge. I sell on merit.***

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—ST. LAMBERT OF RAMONA, No. 62633,—
eads the Ramona Herd of Registered Jerseys of
Geo. W. Thomas, Riverside, Cal.

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Offers sons of **Marigold's Exile King**, out of cows that are now making high official yearly records. For particulars write

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Have moved their herd of Jerseys from San Bernardino, Cal., to the famous Imperial Valley, and hereafter their post office address will be Heber, San Diego Co., Cal., from which they will conduct all their business. Abundant green feed every day in the year will be of great advantage in the best development of our young stock.

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Service bull "SARGENT FOX," 64833. Bred on the Island of Jersey. Sire, the great Flying Fox, that sold at auction for $7,500. Dam, Miss Sargent, reserve winner over Jersey; winner of seven first prizes and five championship cups. "One of the grandest cows the island has ever produced."

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JERSEYS, POPULAR
STRAINS

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Oakhurst Jerseys

Sons of imported Golden Marquis out of prize winning and tested dams. for sale.

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At head of herd. Young stock for sale.

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La Palma Stock Farm

We have some of the very finest Registered Poland-China Swine from 2 to 6 months old, both sexes, for sale. Also older boars ready for service.

Also a fine Registered Jersey Bull and Six Registered Cows for sale.

Write for what you want.

J. A. CAMPBELL. Buena Park, Cal.

A Three Tent Poultry Show

The Poultry Breeecers Society of Southern California and Los Angeles County Association Combine in Making a Fine Exhibit.

The response of the public in attending the Los Angeles poultry show this week is gratifying to those who have turned in and worked hard against obstacles. No room large enough was to be had, so three large tents were erected at the corner of Sixth and Hill streets, and these have given abundant room, the best of light and the best of close-in locations.

Secretary W. M: Humphreys and Superintendent Dillingham, with other members of the Society, have put in a vast amount of hard work, to start in with the bare ground and put up such a creditable show. The coops are well arranged, the various breeds being placed together, and the room is such that one-tier coops prevail. The poultry supply men are given a prominent place down through the center and make a good showing.

All told, there are about 1800 birds exhibited. About 450 of these are pigeons, and another hundred, perhaps, capons, pheasants, pea fowl, song birds, freaks, etc. Amongst the freaks is a four-legged duck, a "crowing hen or a laying rooster, which?" This last freak is a Barred Rock, with big, rooster-like head and comb, and body and plumage of the hen. It is asserted that "she" will both crow and lay.

Amongst the song birds are canaries, finches, "white-headed nuns," orioles and others. The pheasants are from Mrs. Hubbard's ranch at San Fernando, and are beauties. Mrs. Hubbard wins the banner as the largest exhibitor, with 83 birds.

The White Wyandottes win first place as to number of any one breed. White Rocks second, followed by Barred Rocks, Langshans, Orpingtons, Rhode Island Reds, Brown Leghorns and Andalusians. The most surprising feature is the scarcity of White Leghorns. The favorite Whites nearly all took to the woods and left the field to the other breeds.

The biggest tent is filled with utility breeds and the displays of the supply houses. The next tent with pigeons, fancies, games, bantams, novelties, song birds, pheasants, etc., and the last of the three tents with turkeys, geese and ducks.

The attendance from the first day has been really surprising, and proves that Southern California takes pleasure in fine stock.

* * *

The two little baby ostriches attract much attention and have their appetite with them for anything which may be offered.

The great number of brooder chicks and the little fellows just kicking off the shell in the incubators, draw the crowds.

The Henry Albers Company has a most attractive exhibit and the chicks in front of the distorting mirrors add spice to it. The Los Angeles Incubator is showing its worth by bringing out a good hatch. Of course Mr. Albers has a fine exhibit of foods and poultry appliances.

The A. C. W. (Agricultural Chemical Works) people have a fine exhibit of poultry foods. These foods have become favorites with many poultrymen and are today meeting exceeding-large sales.

Mr. McClanahan is on hand with "Old Trusty," showing the goods and giving out his big 120-page catalogue. By the way, this establishment has moved its permanent quarters from 819 S. Main to No. 711, or one block nearer the center of town.

The "Silkies" may be all right for the fancier, and Japs may like the flesh but one who has tried to eat it said "give me crow for mine." Only two of these peculiar Japanese birds are exhibited, but they attract attention..

"The hottest White Wyandotte contest ever," is what the "Dotte" exhibitors are up against. It is certainly a fine exhibit of that breed.

The Petaluma Incubator, with its ducks and ostriches just hatched to show its possibilities, attracts a crowd. Duck eggs are a test of an incubator. The Petaluma stands the test. The Midland foods are exhibited, but the Midland people say "our best exhibit is in the egg basket of the poultryman who uses these profitable foods."

Dean's Pacific Incubator occupies its little corner with a few machines, and Mr. Dean is on hand showing its merits. The Pacific is winning new friends every day.

The effort was made to have every ribbon in place before the doors opened, but of course some were still unplaced at the end of the opening day. The judges worked like nailers, however, and at this writing we have heard no complaint from work of judges.

Chamberlain's goods occupy a prominent place in the Germain exhibit. Chamberlain calls them the "Perfect Foods,". and one poultryman said, "well, I've tried them, and by jingo, I want to tell you they come mighty close to being true to name."

The Jubilee Incubator is in the same exhibit, and the big factory at Sunnyvale has sent down some fine looking machines.

The special cups are beauties, and not yet awarded as we go to press.

C. B. Williams exhibits an ingenious trap nest on a new line. It has two compartments, the second for the hen after laying the egg. The Klonginger Bros. have full exhibit of the Cypher's incubators and foods. Mrs. Williams exhibits the Sure Hatch Incubator. The Queen Incubator has several machines on exhibition. "Kill Roup" has its corner.

Chas. Winsel exhibits poultry foods and the California Incubator, one of the newest incubators in the market.

There are a few less pigeons than last year, but Mr. Foster, who has them in charge, says that their value will excel that of last year by at least a thousand dollars.

LAKENVELDERS.

As may be noticed in another column, the state now has a few of the Lakenvelders, which have attracted some attention in the East, and in articles in the Cultivator. Mr. Sheppard, of Arcata, is the progressive poultryman who has introduced the breed. His local paper, speaking of this breed, says:

A characteristic that is instantly noticeable in this breed is their grace and sprightliness of movement. They are as restless as pheasants and are wonderful foragers and like their cousins, the Leghorns and Hamburghs, good flyers.

For persons having unlimited range, as upon farms and country homes, the Lakenvelders possess advantages not found in any other fowl. They require only about one-half the feed of any other variety. This is owing to their wonderful foraging abilities.

S. C. Rhode Island Reds

Six years continuous and exclusive breeding of Reds. First on cock at L. A. Show, '06. Eggs, per 15, $2.00. MRS. E, L, COWAN, R. F. D. 1, Santa Ana.

Brown and White Leghorns

Prize winners at L. A. Show, '06. Eggs from good laying strains. Eggs, special matings, per 15, $2.00. Incubator lots, $6.00 per 100.
Hemet Poultry Yards, Hemet, Cal.

Mountain View Poultry Yard

Eggs for hatching from thoroughbred Buff and Black Orpingtons and Silver Penciled Wyandottes. A few choice Black Orpington cockerels for sale.

Mrs. C. J. Jacobs - Box 356, Monrovia, Cal.

EGGS WANTED FOR HATCHING

Our big adobe incubator brings the best results. Send us your eggs and we will return the chickens.

YOUNG CHICKENS AND TURKEYS WANTED

We are prepared to buy all the healthy young chickens and turkeys you can send us and will pay above the market price. Ship by Wells Fargo express; we will pay the charges and remit balance to you promptly.

BAMBOO POULTRY RANCH AIKEN & CO. Props. **GLENDALE, CAL.**

"THE HEN THAT LAYS IS THE HEN THAT PAYS"

And the hen that lays must have proper food, be free from lice and generally in a healthy condition. Regarding lice the **DOKE LICE DOPE** beats the world. Try it. For general healthy condition the

DOKE EGG FOODS

have been tried by many poultrymen and have proved winners. They give the best results. Call on us at our new quarters,

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Address, LEO. W. MARDEN, MANAGER

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK

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IF YOU WANT EGGS YOU WILL FEED NO OTHER

Used by all the largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the GOLD MEDAL at the St. Louis World's Fair for greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1604.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A FILCHER, Commissioner.

And Now Comes New Reward for Merit:

Read the following telegram received from the Lewis & Clark Exposition at Portland:

"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

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POULTRY FOR PROFIT

MRS. A. BASLEY, ASSOCIATE EDITOR, HOLLYWOOD, CAL.

BIDDY ON THE BROODER.

This is the week of the big poultry show, and I want to urge all my readers who can possibly come in to Los Angeles, to visit this exhibition, not to miss the opportunity of not only studying the beautiful fowls, of which there are almost every variety, but also of seeing the incubators, brooders, coops, feeding vessels; the various foods, grits, etc., and all the appliances needful for the successful prosecution of the business of keeping and rearing fowls.

* * *

I have frequently written urging our readers to keep trap-nests in order to test the laying qualities of the hens. I have had two trap-nests made at my own expense for this show. These may be seen at Mr. Alber's exhibits. His representative has kindly consented to explain them to those who wish to have him do so. These trap-nests were invented by a government expert at the Maine experiment station; they are not patented, any one may make them. I consider them the easiest made and most satisfactory of any. I have twice given the plans and description of them in the Cultivator and now our readers who are going to the show can have the opportunity of examining them for themselves. There are many other interesting and new appliances there, but I must leave a description of them to others, whilst we return to Biddy and our chickens.

As I have said many times, Biddy must have been well dusted with insect powder; Lambert's death to lice is what I generally use. Stroke Biddy gently, she will ruffle her feathers to show her displeasure and a good handful of powder can be peppered or sprinkled under the feathers. This should be done once or twice every week during incubation, then when the chicks are hatched I put a tiny bit of fresh lard on the top of the head and under the chin of each baby chick. In this way they are always free from lice.

I feed them with chick feed that the brooder chicks have, in fact I treat them in exactly the same way, keeping them and their mother in a "cat proof" coop or small run, with a coop or box for her to hover them in at night. In wet weather she and her babies should be under shelter in a shed. When the weather is fine the "cat proof" coop should be out on the grass and be moved frequently on to a fresh, clean place. Clean water and skim milk should be kept before them, the drinking vessels being scalded every day.

I read recently an article by Mr. Parks, one of the advocates of the dry feed method. It so aptly describes the usual way of treating Biddy and chicks that I will reproduce it here.

"The usual methods when the old lady brings off her family, are to shut her off in a coop and bring on all the wet mash she and the chicks ought to eat for a full day's time, dump it down on a board in front of the coop. Some of this is eaten, most of it forms a doormat for the youngsters, and in one-half hour's time looks much like the dirt surrounding the coop. Lying in the hot sun it does not take long to start rapid fermentation and we soon have germs of bowel trouble growing at the rate of forty miles an hour.

Books say that chicks should be fed five times a day, and the nervous owner thinks that if five is good, six is better, and soon comes round with another dose of the same feed, puts it on top of the first "charge" and we have a sandwich of wet dough and dirt. In a few days' time the chicks begin to start for the world where mashes are unknown, and the owner says "darn the chicken business," or else he blames the man from whom he purchased the eggs for having "inbred stock," and we have another case of the "business don't pay." Perhaps his painstaking neighbor improves on this method and bakes the mash, which is quite an improvement, as it removes a part of the water, but at the same time is quite a little labor. His chicks do better, making a phenomenal growth for a few weeks, and he thinks that the solution of the poultry man's trials lies in cooking the food. He invests in an amateur bakery and bakes everything. His chicks continue to thrive, apparently, but as the hot weather comes on he notices some bowel trouble among the half-grown birds. These die and he shouts that cholera has struck him, writes to the editor of a poultry paper, who tells him that the symptoms look like cholera. After changing the feed and

BUFF LEGHORNS

A few cockerels for sale. After Jan. 1 eggs from choice mated pens, $1.25 per 15

Chas. G. Miller, 40 Elm St., Watsonville, Cal.

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18 White Leghorn Pullets just commencing to lay, also 2 White Leghorn Cockerels and 2 Barred Rock Cockerels, Lytle strain.

Phone 663 OSSINA LOW. GLENDALE, CAL.

Single Comb White Leghorns

Thoroughbred Stock. Eggs, $1.50 per 15. Send for illustrated catalogue.

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STANDARD BRED BUFF ORPINGTON EGGS

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Three distinct strains, the Cosh, Morse and Griffith. Eggs per 15, $2.50 and $3.50. Incubator lots this year, $7.50 to $15.00 per 100.

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Phone West 841. 3111 Walton Ave. Los Angeles

White and Silver-Laced Wyandottes
White Plymouth Rocks
White Leghorns and Black Minorcas

Plymouth Rock and Wyandotte eggs, $2.00 per setting, $8.00 per hundred.

Leghorn and Minorca eggs, $1.50 per setting, $6.00 per 100.

I have been breeding thoroughbred poultry for over 20 years and have as fine stock of these varieties as there is on the Pacific Coast.

I also hatch and can supply little chicks from a dozen to a thousand from the above varieties delivered anywhere within 72 hours of San Jose. Prices on application.

J. S. Smith, Box 526, San Jose, Cal.

YARDS—CORNER MOORE AND CHAPMAN STS.

30 DAYS TRIAL

Buy From Our Factory—Save One-Third.

PRACTICAL INCUBATORS positively the best. Hatches more and stronger chicks. 10 YEARS' GUARANTEE

Cat. free. PRACTICAL INC. CO., 720 S. 11th St. San Jose, Cal.

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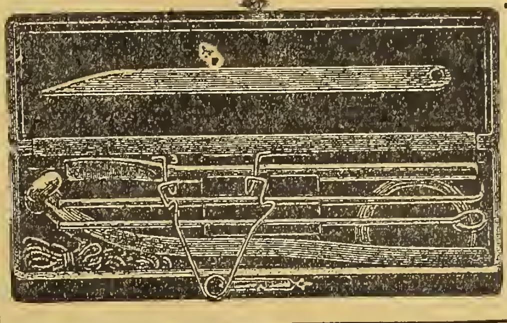

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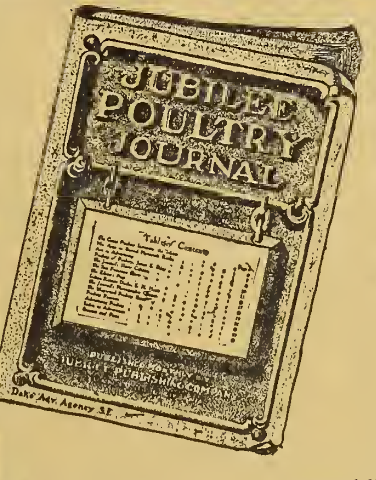

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There is **Money** to be made in **Poultry; more money** from **Good Poultry; much more money** from the **Best Poultry.** To get this money you must **Know** poultry; must **Know right** methods; must **Know best** markets—in short **you must Know how!**

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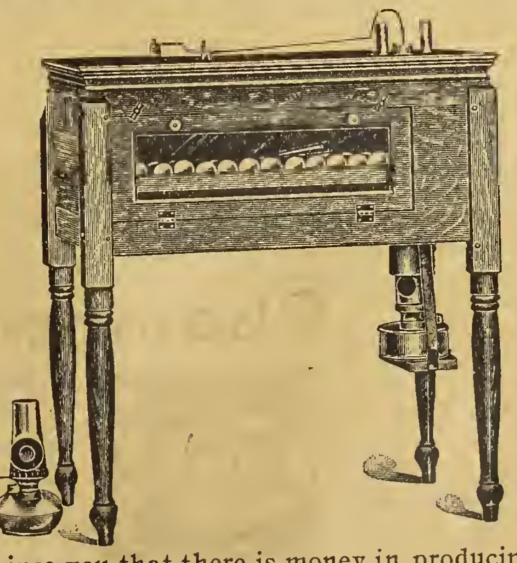
Energetic Agents Wanted—You can make Big Money

JUBILEE POULTRY JOURNAL

SUNNYVALE Santa Clara County CALIFORNIA



Poultry and Eggs Wanted

In nearly every town in the State you will see this sign outside of a merchant's store and it will certainly convince you that there is money in producing poultry either for market or eggs. During the number of seasons the CHATHAM INCUBATORS AND BROODERS have been sold on the Coast they have been the means of assisting hundreds to make money out of their poultry and eggs— and the Chatham has given such a good account of itself that I have decided to sell it this year on our—On Time—terms, all freight charges paid. Write me for descriptive catalogue.

Geo. W. Foott, 325 East Morrison Street., PORTLAND, OREGON

losing half his flock, he gets around to hard grain, and pulls them through, or what is left of them, although they are not now as large as the chicks raised under the natural method without the assistance of the bake shop."

Mr. Parks' picture is graphic and really not exaggerated. The method which I have used for years, and which I have described in these pages many times, is to use the dry chick feed. Mr. Parks also keeps before the chicks always a dish of beef scraps, and plenty of green food, besides the small grains. They take the food slowly and naturally. Their digestive organs are not over-taxed, the liver not over-worked and enlarged, and they have every chance of growing up strong, sturdy, vigorous fellows, with the best of constitutions. It was proved at one of the government experiment stations that the cooking of the food, if the chicks were fed only cooked food, was positively injurious, the chicks died from it. The cooking of food, some think, makes it more digestible. Which part of the food is rendered more digestible? The starchy part may be more easily assimilated, but the protein is not. The simple scalding of a mash makes no chemical change. It might as well be mixed with cold water as with hot, the chemists tell us. Then why not feed it dry?

I hope our readers will all read my reply to Mrs. H. A. F. on "poison or what?" It may help many.

* * *

EDITOR'S QUESTION BOX.

Poison or What?—(H. A. F., Pomona, Cal.) About four years ago I saw a sample of the California Cultivator and I fell in love with some of your writings on poultry, and I subscribed for the paper and have taken it ever since. I am more than delighted with your writings on poultry and I have got three to take the paper on account of the poultry department. I have been keeping about two hundred chickens for about five years and have had no serious trouble and done well with them until recently. Have had quite a bit of trouble; they seem to have bowel trouble. Some seventy-five young pullets, about three months, had it first. They were Brown Leghorns and Minorcas, mixed, and in a few weeks I found some yearling and two-year-old hens had it. They seemed to have it worse than the young ones and dropped off a good deal in their egg yield. Quite a lot of gravel passes in the droppings and they pick it out and eat it with a relish. I have been feeding the same as usual, rolled barley one morning and oats the next. On Sunday a mash of bran to the old hens, with one-third cornmeal to the young ones; ten pounds of fresh meat and bone ground fine is mixed with the feed, also one teaspoonful of mustard and ginger and cayenne, and a teacup full of charcoal well mixed with the soft food once a week in cool weather. The night feed is wheat twice a week, Egyptian corn three times and common cracked corn twice a week, then skip one week, etc. Clean the coops every day, no mites and don't think they have lice. I paint the perches with Lee's lice killer. Will you please give me your advice what the trouble is and what to do for them. How long would you advise giving Bluestone? It seemed to help them. The most of them look fine with bright red combs. I feed them sour milk and keep grit before them all the time. Would you advise setting their eggs?

Answer.—The trouble is either poison or worms. The fowls are getting something that disagrees with them. The difficulty is to discover what it is that is disagreeing with them. I think it may be in the fresh meat; the butchers put some preservative on the meat which makes fowls sick. I had to give up feeding my little chicks Hamburg steak on this account. I now use "beef scraps" from Armour or Swift, or one of the large packing houses. Putrid meat will have the same effect, either is more or less poisonous.

Another thing which is also poisonous is mildew or mould from the grain or food getting wet. There was a big fire some years ago at a mill in Los Angeles. A great deal of wheat was spoiled and many people bought the wet wheat to feed their fowls. Hundreds died and their owners thought it was chemicals used to extinguish the fire. It was nothing but the water on the wheat, which made it mouldy. Be sure that your barley, oats, corn, etc, is not mouldy.

Now as to the treatment, instead of the blue stone, I would put some bicarbonate of soda into the water, about a teaspoonful in a quart of water. Keep this up for a week.

If you think it is worms, put a teaspoonful of turpentine into a quart of water and give them no other water to drink. Keep this up for a week. Or if one or two of them seem more ill than the others, give them a teaspoonful of castor oil and a teaspoonful of turpentine mixed; this will usually bring away the worms. For a week I would advise you to give the flock mixed in the mash, onions chopped fine. Onions are a very good tonic, will cure a cold, and often will kill worms. You are feeding for Leghorns and Minorcas all right, except perhaps not enough green feed. I would not advise your setting the eggs of any hens that show any symptoms of sickness.

WHITE WYANDOTTES.

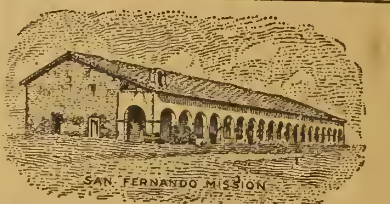
Editor Cultivator: Will you kindly tell me about the relative value of the Wyandotte as a general purpose fowl? I am a new beginner in California poultry raising and would like your idea of the Wyandotte.—W. W. C., Anaheim.

The above question was sent to a Wyandotte fancier who, makes the following answer:

To many breeders of other varieties the popularity of the White Wyandotte has been a cause of wonder and envy. They seek to explain it by saying that it is simply the result of a boom and that this popularity will wane just as quickly as it came. I think every White Wyandotte breeder will join with me in a protest against any such theory. An analysis of this popularity will, however, not be out of

Standard Bred S. C. White Leghorns
EXTRA LARGE BIRDS AND HEAVY LAYERS. Eggs, $2 per 15; $8 per 100; $60 per 1000 from January until July only.
CAPTAIN MITCHELL SANTA BARBARA, CAL.
Author of "A Practical Poultry Plant for Southern California," $1.25 cloth binding, on sale by Calif. Cultivator

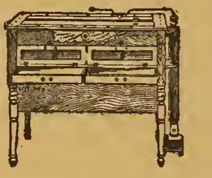
POULTRYMEN! TAKE NOTICE!
The Jubilee Incubator Co. has just issued a magnificent catalogue—80 big pages—describing the Jubilee Incubators and Brooders—the business machines of the world. YOU NEED IT.
The Jubilee Line of Poultrymen's Goods sold direct to you at wholesale rates. The Jubilee Book tells all. Send for it. Mailed FREE.
JUBILEE INCUBATOR CO.
SUNNYVALE Santa Clara County CALIFORNIA



Mission View Poultry Ranch
MY SPECIALTIES:
WHITE WYANDOTTES
¼ WILD MAM. BRONZE TURKEYS
BUFF COCHIN BANTAMS.
The original Adobe Incubator, capacity 3000 eggs. Adobe hut and cold brooder 360 feet long.
Mrs. G. D. Hubbard, Box 422, San Fernando, Cal.

Dean's Pacific is an Incubator built on scientific plans and has all the latest improvements. Every machine guaranteed. "Facts From Experience" and Catalog for the asking. Address Dean's Place, 2509 Central Avenue, Los Angeles.

Emery's Pure Meat Meal
Don't believe all we say, but just enough to buy our Poultry Foods
Ask your nearest dealer for them and take no imitations
Emery's "B. B. & B."
THE PACIFIC GUANO & FERTILIZER CO. Successors to N.Ohlandt & Co San Francisco, Cal.



The Stockton Incubator
Is now manufactured under new management and is in every way put up as a first-class machine. Our 1906 model is a perfect working incubator, economical to run and gives a fine hatch.
Winner of silver medal at Pan-American, also medal at California State Fair. Write for circular and information.
Stockton Incubator Co.
Marshall & Barnes, Props. Stockton, Cal.

TO WHOM IT MAY CONCERN:
As the chicken raising season is at hand, we beg leave to call your attention to a few of our specialties: Do you need an Incubator? Our machines are fully guaranteed and have proven themselves unsurpassed wherever used. Do you need Brooders? We manufacture just what you want; fully guaranteed, made of the finest material and of the best possible workmanship, and, above all, a practical machine which saves the purchaser money, time and labor. Do you need Poultry Supplies of any kind? We manufacture a line of Supplies the use of which makes Poultry Raising not only profitable, but a pleasure. Among our specialties are: Our Water Fountains, our Self Feeder for Chicks; our Feed Troughs, large and small; our Lamp Fillers; our convenient Must Hatch Nest Boxes; our safe and sure Must Hatch Insecticide, our sanitary Must Hatch Disinfectant; our sure death Must Hatch Lice Exterminator; our Poultry Compound, a fine Spring and Fall Tonic.
In connection with the above list, all of our own manufacture, we can also furnish the following, which are indispensible to the Poultrymen: The No. 128 Clover Cutter, the Enterprise Bone Mill, the Ohio Feed Cutter, the Banner Root Cutter, the Enterprise Feed Chopper, the Ideal Duplex Feed Mill, and the Farmer's Boiler. Do you wish to make your own Incubator or Brooder? We can furnish you all the necessary parts for making an Incubator or Brooder, also plans for the best and most practical Poultry Houses. Did you ever purchase Just Hatched Chicks? We have a Hatchery of 50,000 chicks per month capacity, in operation the year round and have, for the past few years, been successfully shipping, in our specially constructed carriers, just hatched Chicks, to distances as great as 2,000 miles. If you need them book your order early, as our future delivery list is rapidly filling up. We can also supply White Leghorn hatching eggs in quantities desired. If you have not already received our catalogue, write for Catalogue B, and you will find therein a more detailed description with prices, etc., of the above.
Hoping to hear from you in the near future, we are, yours very respectfully,
MUST HATCH INCUBATOR CO.
Petaluma, Cal., Jan. 1., 1906.

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"Nothing Just as Good"

World's Chick Feed of To-Day. The only original Dry Chick Feed. All others are worthless imitations. Chamberlain's Perfect Chick Feed was used exclusively at the great St. Louis World's Fair during the 7 months. This the highest compliment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.
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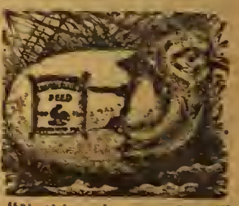
THE WORLD'S GREATEST EGG PRODUCER.



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SPECIAL PRICES ON TON LOTS.
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RHODE ISLAND REDS
Fine large stock, heavy layers, best of broilers. Eggs, $1.50 per setting.
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WHITE LEGHORNS
Eggs from pure white, trap nested, high-grade birds. Just a few cockerels for sale.
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Toulouse Geese
75 head of Fine Stock to select from. Write
H. O. Higgins, Box 741, Riverside, Cal.

BARRED ROCKS, WHITE MINORCAS, INDIAN RUNNER DUCKS AND WHITE HOLLAND TURKEYS
Prize winning birds at Central California Fair, where 7 firsts were won in '05.
JOE McDONALD, R. F. D. 2, HANFORD, CAL.

Walnut Grove Poultry Ranch
Standard Bred White Wyandottes, (Hay's strain). Eggs for hatching from carefully mated stock, $2 per 13; $12 per 100.
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Send for large circular fully describing these machines.
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and Fancy Pigeons. Largest stock on the Pacific Coast. Homers in 500 pair lots. Twenty (20) varieties of Fancy Pigeons. Safe shipments any distance.
THE OLIVE PIGEON LOFTS
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BARRED ROCKS
EXCLUSIVELY
Send for 16-page 1905 Catalogue
H. R. CAMPBELL
Box O PETALUMA, CAL.

Bronze Brown Turkey Gobblers For Sale
Weigh 25 lbs. at 15 months old. Prices—Gobbler and Hen, $12; Gobbler, $8; Hen, $6.
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LINDGREN BROS. KINGSBURG, CAL. McPHERSON, KANSAS
BUFF LEGHORNS BARRED ROCKS
Prize-winners at Chicago, St. Louis, San Francisco and majority of prizes at Portland on Buffs. Choice Cockerels and Pullets for sale.

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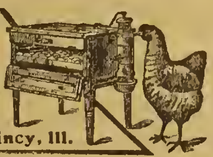
MRS. F. T. HUNGERFORD, MANAGER, HYNES, CAL.
At the last Los Angeles Show our birds won twelve prizes. At the California State Show, Nov. 27th, 1905, on I. R. Ducks, three prizes on four entries. White Minorca and White Wyandotte eggs, $1.50 per 15, $8.00 per 100. Indian Runner Duck eggs, $1.00 per 13, $5.00 per 100.



$12.80 For 200 Egg INCUBATOR
Perfect in construction and action. Hatches every fertile egg. Write for catalog to-day.
GEO. H. STAHL, Quincy, Ill.

WHITE LEGHORN CHICKS, 10 Cts.
WHITE PLY. ROCK CHICKS, 12½c.
Both from good stock and in good healthy condition. The W. P. Rock males where I got my eggs are from prize winning stock. Leghorns are selected and have good markings. This is a fine time to start young chicks, after the rain; yards purified, green growth coming and mites and lice at a disadvantage.
Wm. A. Green, Box 401, Anaheim, Cal.

ALBERS' BLACK MINORCAS
Still Lead
——Circular Free——
GEO. R. ALBERS
4849 MARMION WAY
LOS ANGELES, CAL

Mountain View Poultry Ranch
S. C. White Leghorns—Heavy layers. Eggs, $1.50 per 15, $5.00 per 100.
Indian Runner Ducks—Males for sale. Eggs, $1.00 per 13, $3.00 per 50, $5.00 per 100.
Mrs. J. L. Updyke - Fullerton, Cal.
Successor to Jacob Kreger

LAKENVELDERS
From Dr. A. H. Phels, New York.
Eggs and a few young stock for sale. Also Buff Orpingtons, Brown and White Leghorns.
Ocean View Poultry Ranch
W. R. Sheppard, Prop., R. F. D. No. 1, Arcata, Cal.

place. I shall explain it by simply stating the reasons that led me some years ago to give up all other varieties for the White Wyandotte. First of all, I decided that in this practical age the utility or general purpose fowl was the one to breed. I found this in the Plymouth Rock and Wyandotte, but after many years' experience, I found that the Wyandotte excelled the Rock as a layer. So it was a case of Wyandotte, and my choice was naturally the white variety, as being in my eyes one of the most beautiful of domestic fowls. They attract every one, from the amateur to the veteran poultryman. Even people who know absolutely nothing about fowls are struck with admiration when they see a flock of them with their snow-white plumage, bright yellow legs and rose combs; who could help admiring them? Therefore it seems to me their popularity lies in their beauty and their usefulness. Taken together, what stronger combination could be devised? In all poultry shows it is the White Wyandottes that attract the most attention. Even the breeders of other varieties never fail to size up this class and pick the profitable winners.

When I commenced breeding White Wyandottes I had in mind a double object, namely, the production of a heavy laying, prize-winning strain. Many advised me that this was impossible and backed up their assertion by the highest authorities that the ideal Wyandotte shape does not conform to the ideal egg-laying type of body. They claimed that the long-bodied hen would be a better layer than the one with a short body. However, this has not been my experience, because most of my record layers have been typical shaped birds, with that short body and back so admired by fanciers. To my great satisfaction, therefore, I have found that the prize winner and the heavy layer may combine in the same bird. One of the heaviest layers I ever owned has produced several winners at the large shows. By keeping the utility qualities of the White Wyandotte well to the front they need never lose the premier position they now occupy.

CHICKEN TALK.

Cool mornings feed warm mash.

Breed from your very best birds.

Scald the drinking vessels often.

Too fat hens will lay soft-shelled eggs.

Over-feeding is as bad as under-feeding.

Perches are easily cleaned when made moveable.

Don't keep chicks too long on one piece of ground.

The hens lay more eggs when separated from the cock.

Force the hens to scratch if they don't do it naturally.

Use hot whitewash on the houses in preference to cold.

Unless a chicken is valuable don't waste time doctoring it.

When feeding green food to poultry see that it is minced fine.

Pure water is one of the most important items in chicken culture.

For best results clean the chicken coops and houses once a day.

Give the fowls fresh water at least three times a day; once is not enough.

It is best that the chickens should always have one person attending them.

If you wish to avoid roup keep the chickens from drafts.

As soon as your cockerels begin to develop combs put them in coops by themselves.

Put a little lime water in the drinking water once in a while to avoid bowel complaint.

Keep the pullets that grow the fastest and strongest; they will be your best winter layers.

Be sure the new chickens you buy are free from disease before you put them with your flock.

Buy a few fowls now when you can get them cheaper than in the spring, and begin that poultry plant.

Do not take chicks away from their mother when just hatched, as they need the warmth of her body.

A wash of chlorate of potash in vinegar is good for canker sores in the throat and mouth of chickens.

If there is an unpleasant odor emanating from your chicken house the house is neither clean or healthful.

It is advisable to dig out the dirt in the henhouse two inches in depth occasionally and fill in with clean, fresh earth.

THE RURAL TELEPHONE.

Among the added improvements on the farm of late years, is the rural telephone. Indeed it has become a necessity to most farmers, and especially so if they are doing a business which requires them to keep in touch with the markets of the city.

It has become almost not only a financial matter but in the matter of saving time it has proven an extremely valuable adjunct to the farm.

If a physician is needed for the family, the rural telephone will bring him, saving the time of someone who would have to take a horse and go for him, perhaps taking the horse out of a team and from much needed work.

If a horse or cow gets sick, the veterinarian may be called and save the animal. So with many other things about the farm. The time will come when every well managed farm will have the rural telephone.

"Did I understand you to say that all rum selling had been stopped in your town?"

"Not at all. I merely said it was strictly prohibited." — Philadelphia Press.

"I hear Bumps has given $1,000 to the conscience fund."

"Can't be true."

"Why not?"

"Bumps never had $1,000 worth of conscience."—Detroit Free Press.

Rhode Island Reds
Record making layers: average per hen, whole flock, 180 eggs for '05. $1.25 per setting, 2 settings, $2.00; incubator lots, $6.00 per 100.
J. S. ENGLISH, R.F.D. 112, Gardena, Cal.

BUFF ORPINGTONS
Eggs from strong constitutioned, producing birds. $1.25 per setting, 2 settings, $2.00.
Robert Westcott, R. F. D. 115, Gardena, Cal.

Blue Andalusian Eggs
Exhibition or utility birds. Hens have free range. Eggs, $1.50 and $2 for 15: $7 per 100. Stock for sale. *Mrs. J. S. Duff, 3145 S. Hoover St., Los Angeles, Cal.*

Young Half-Wild Turkey Gobblers For Sale
Price $12.00 Each.
Mrs. N. Frank Morse - Fullerton, Cal.

Choice Alfalfa or Chicken Ranch
Twenty acres good sandy loam soil, no alkali, abundance of water, 5-room house, large barn and incubator cellar. Near Anaheim.
WM. A. GREEN, BOX 401, ANAHEIM, CAL.

Rose Comb Wh. Leghorns High-Grade Buff Orpingtons
Varian's Poultry Yards
P. O. Box 666. Home Telephone 1886
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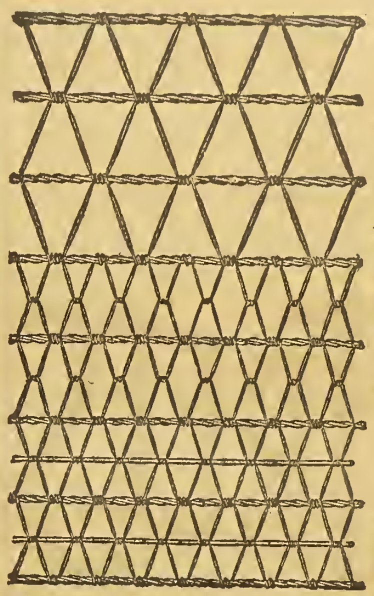
BLUE RIDGE POULTRY YARDS WM. H. BROWN, Prop
Exclusive Breeder of Thoroughbred **BLUE ANDALUSIANS**
Eggs, $2.50 and $3.00 per 14 Exhibition and utility stock for sale. 132 Ave 32 Los Angeles, Cal.

ELLWOOD FENCE



We guarantee Ellwood Fence because we know how it is made. All the resources of the greatest steel and wire mills in the world are brought to bear in getting as near perfection as it is possible.

We mine the ore from our own mines, make it into steel in our own mills, draw it into wire and weave it into the fence — all under our own eyes from the ground until it is ready to staple to the posts. The best known processes are employed. Dealers in every place.
Get Catalogue.
American Steel & Wire Co.
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S. C. Brown Leghorn Cockerels
SPECIAL SALE
40 at $2 each; 20 at $3 each; 15 at $5 each; 25 Exhibition birds from $5 each and up. Eggs from my best pens at $3 per 15; second pen, $1.50 per 15. Send for illustrated circular.
W. E. Mercer - - Ventura, Cal.

Buff and Black Orpingtons
Buff and Brown Leghorns
Indian Runner Ducks—Bronze Turkeys
Eggs and Young Stock in Season
W. W. Bliss - Duarte, Cal.

SQUABS PAY BIG MONEY
Require but little care. Our carefully selected, high-bred homers, at $1.40 per pair, start you right. You cannot purchase such excellent stock at this low price anywhere. Our booklet C tells all about squab raising. 10 cents.
Bay State Squab Co., Wakefield, Mass.

White Plymouth Rock Poultry Ranch
Eggs for hatching from First Class Stock, $6.00 per 100, $1.50 per setting 15 eggs.
J. T. DAVIS, Prop. POMONA, CAL.

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ROEDING TRUE TREES FRESNO, CAL.

Comprise over 1190 acres situated in the best location in the country for producing the most perfect and healthy

TREES

and by our system of growing different varieties in our separate nurseries we are able to grow them all ***true to name.***

Deciduous

Apple, Pears, Plums, Prunes and Cherries.

Nut Trees

Walnuts and Chestnuts on their own roots and grafted trees.

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Oranges, Lemons, Pomelos, Citrons.

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Grafted on their own roots. All the leading table, wine and raisin sorts.

Berry Plants. Burbank's Crimson Rhubarb, Ornamental Trees and Shrubs, Roses, Palms, Greenhouse Plants.

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Our great specialty. None genuine without our seal.

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We will mail our large, profusely illustrated catalogue, English or Spanish, to any address on receipt of 5c postage. Price List on application.

Paid-Up Capital, $200,000.00.

FANCHER CREEK NURSERIES (Inc.)

Geo. C. Roeding,
Pres. and Manager
Box 14,
Fresno, Cal.

General Agricultural Notes

CALIFORNIA CROPS.

The Crop Reporter, published at Washington by authority of the Secretary of Agriculture, gives the following statistics of California crops for 1905:

Corn.—Acreage 56,592; yield 32 bushels per acre; total, 1,810,944 bushels; average price, 76 cents; farm value, $1,376,317.

Wheat.—Acreage, 1,886,238; yield, 9.3, total crop, 17,542,013 bushels; average price, 82 cents; farm value, $14,384,451.

Oats.—Acreage, 168,755; yield, 28 bushels; total, 4,725,140 bushels; price, 51 cents; farm value, $2,409,821.

Barley.—Acreage, 1,237,533; yield, 21.5; total, 26,606,960; price, 59; farm value, $15,698,106.

Rye.—Acreage, 67,402; yield, 13; total, 876,226; price, 77 cents; farm value, $674,694.

Potatoes.—Acreage, 50,291; yield, 165 bushels; total, 8,298,015; price per bushel, 67 cents; farm value, $5,559,670.

Hay.—Acreage, 589,119; yield per acre, 2.40 tons; total production, 1,413,886; value per ton, $10.05; total farm value, $14,209,554.

EUROPEAN SUGAR OUTPUT.

The harvesting of beets being ended, Gieseker has issued his estimate of the probable production of raw sugar in Europe for the season 1905-6, which, as published in the Bulletin des Halles, is 6,855,000 tons, an excess of about 2,150,000 tons over the production of 1904-5.

CLIMATE AND CROP REPORT

United States Department of Agriculture, Climate and Crop Bulletin of the Weather Bureau, California Section, for he week ending Monday, January 10, 1906.

General Summary.—Clear and cold weather prevailed throughout the State, with dry northerly winds. Fogs were frequent in the coast districts and severe frosts occurred nearly every night in the interior. Slightly warmer weather prevailed at the close of the week.

The seasonal rainfall is far below average except in portions of Southern California, and the soil in most sections is too dry and hard for profitable cultivation. Farming operations are generally at a standstill, although some plowing and seeding are being done. Early sown grain is in poor condition and making slow growth. The grain acreage in the central and northern sections is less than usual at this date and present indications are that it will fall below average for the season. Grass made a fair start during December, but in many places it has been killed by the severe frosts and its growth greatly retarded in all sections. Feed is scarce and cattle are suffering. Reports have been received of quite serious losses of livestock, owing to scarcity of feed and unusually cold weather. Conditions are somewhat better in Southern California, but rain and warm weather are needed in all sections.

Timely warnings of frosts and customary precautionary measures averted serious damage to oranges in Southern California, but young growth on trees and tender vegetation suffered considerably. Orange harvest is progressing rapidly in the south. The oranges are said to be generally of smaller size than usual, but the yield is good.

Eureka Summary. — Cold, rainy weather has been very severe on stock. Feed is short, and on some ranges cattle are subsisting almost on acorns. Owing to the dry summer and cold weather, grass did not get a good start and has but little substance in it.

Los Angeles Summary.—Cold and frost continued until Saturday, when weather became threatening and showers fell in San Gabriel valley at night. Drought continues. Rain is needed badly; irrigation general.

ERADICATING JOHNSON GRASS

From experiments already carried on by the U. S. Government, it seems feasible to eradicate Johnson grass in a single year by plowing in the autumn, care being taken to turn the soil completely. After plowing the land should be harrowed immediately, so as to get it smooth and well pulverized, after which it is given treatment by root diggers, which tear out and collect the roots. In the spring the land should be plowed again and put in some cultivated crop, in rows, of course, giving it ordinary good tillage. All plants of Johnson grass that remain should be pulled out by hand, and by repeating this whenever the grass gets about 6 inches high it can be eradicated in a single summer without an excessive amount of labor. These directions apply to cultivated fields and are not practicable along fence rows, ditch banks, etc.

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Walnut and Loquat trees, Gardena Dewberry and Brandywine Strawberry plants for Logans, Mammoth Blacks or Phenomenals.

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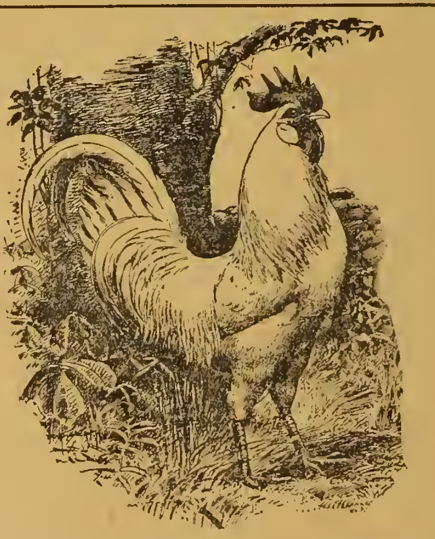
15,000 Fine Trees three years from seed next spring. No clubs—fine fibrous roots; just the tree to take hold of a new home.

Valencia, Na-Valencia, Improved Navel, Washington Navel Oranges and Nectar Pomelo.

Not touched by the frost.

A. P. Griffith, Azusa, Cal.



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Best Strain, Best Birds.
Greatest Layers. Largest Eggs.
WIN THE BLUE AT THE ST. LOUIS WORLD'S FAIR.

FIRST PRIZE HENS, St. Louis World's Fair; also at Madison Square Garden, New York's Great Show, 1905.

All specials and medals—best hen, best head, pure color.

FIRST PRIZE COCK At Madison Square, New York, 1905, and beating St. Louis World's Fair and Boston winners.

FIRST PRIZE PULLET at Madison Square Garden, New York, 1905, as well as one of the best cockerels in the U. S.; were sired by our famous Rob Roy Jr.

Our patrons report grand success with pullets from our stock; 26 eggs per month, 56 eggs in 64 days, 18 eggs in 19 days; eggs that weigh 2½ to 3 ounces.

229 eggs already this season.

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Producers, Importers and Dealers in Fertilizing Material of All Kinds. Send for our prices before buying elsewhere, and you will save money

Queries and Suggestions

WALNUTS.

Editor Cultivator: I have English walnuts on my ranch, which is a sandy loam soil; should the trees be pruned? If so, when? Some of the limbs are very low, almost to the ground. I pruned some of the trees a month or six weeks ago, and now after each cold morning the water drips in quantities from where the large limbs were sawn off. Will this not injure the trees? If so, what shall I do?—L. G. W. Tropico.

The time to prune is now. The bleeding of which you speak is very common. We know of no way of stopping it and have never noticed any injury therefrom, although it certainly does not benefit the trees.

PEACH PITS.

Editor Cultivator: Please tell me where I can get 200 pounds of peach pits and also give the address of some cannery in the south.—J. M. H., Pine, Cal.

Southern California Canning Co., Macy street, Los Angeles; or G. H. Waters & Co., Pomona.

ACACIAS WANTED.

Mrs. M. M. Child of Santa Barbara wishes to know where she may obtain the following Acacias, who has them? Centis, diffusa, homalophylla, obliqua, macradenia, saligna.

JAPANESE PERSIMMONS.

Editor Cultivator: Are Japanese persimmons propagated from seed or cuttings? Where can I get the seed?—Subscriber, Newcastle.

Very satisfactory persimmons are obtained from seeds, but if you wish the best, get the grafted sorts. We know of no seed supply, but presume the larger seed houses and nurseries could either supply you or inform you who could.

BEETS AND PEANUTS.

Editor Cultivator: Kindly answer these questions through your paper: Will sugar beets grow in a clayey soil? How should they be planted? What kind of soil does it require for peanuts to grow in? How should they be planted? How much seed of beets and peanuts does it require to the acre, also the cost per acre of each.—I. N., Hanford.

Sugar beets will not succeed on clay soil. For cultural directions, etc., send to the University at Berkeley for Circular 13, (March, 1905) "The Culture of the Sugar Beet;" to comply with your request in a way to benefit you fully would require too much space.

In regard to peanuts, we quote from Prof. Wickson: "The quality of the land should be a rich, sandy loam that is known as upland. Damp land gives the nuts a straw color and the quality of the nut is not so good as those raised on upland. They should not be irrigated except on land that will not bake and then they are liable to be discolored. The best time to plant is from the first to the middle of May, acording to the location, the object being to get the seed in after the ground warms up well. Very early planting makes an uneven grade of nuts, the first to form become ripe too soon for the main crops and the stems get soft, so that they will not lift the nuts from the ground at harvest time. It takes about thirty pounds of the California, or White Virginia, and fifty pounds of the Tennessee Red to plant an acre. The usual distance to plant is in rows three or four feet apart, with the hills sixteen to twenty inches apart in the rows. The Tennessee may be planted a little closer. The California peanut is the best to plant, as it yields from three to four times as much as the Tennessee Reds and finds more ready sale. Peanuts should be cultivated about the same as corn, not allowing the weeds to grow among them, keeping the ground loose and mellow, and when the spikes begin to form, they should not be disturbed. If they are, it causes nuts to blight or not fill out. The blooms do not require covering."

The cost of growing and harvesting has been estimated by one of the best Orange county growers to be about $30 per acre.

GARDEN SOIL.

Editor Cultivator: Will you kindly advise me through your valuable columns if sandy loam soil taken from 5 to 6 feet below surface of ground is good for flower beds if mixed with well-rotted stable manure, or is top soil better.—H. D. L., Sunnyvale.

Virgin soil, if of good physical texture is better than the worn out surface soil. Of course it lacks humus, which will soon be supplied by the stable manure you contemplate using. It may also be deficient in nitrogen and if the plants show it you must stimulate them by using a little nitrate of soda and later add some more permanent food.

The California Pomelo

(Continued from Page 31)

this fruit came in immediate competition with Florida. In another case the gentleman thought it wise to contend with his principal (in the East) that my fruit was equal to Florida's. The gentleman was very resistant on his point. At his instance a box of Nectar from my grove and a box of seedless from another grove were sent to him for his critical judgment. Receiving a reply the agent wrote me "Mr. ———and I had some spirited correspondence regarding grapefruit as the result of several criticisms he had made about the California fruit. After stating that he sent him the samples of both my fruit and the seedless, he adds:"and after a long dissertation on the Nectar I asked him to give an opinion after trying both kinds of fruit. He now comes back at me with the statement that 'the Nectar improves with acquaintance.'"

I have endeavored to show in this article that California can and does raise the Pomelo, improperly called grapefruit, superior, or at least compares favorably with Florida fruit, and that that is fit only for home consumption. It is just as cheap to raise the right kind and it is equally delicious—hence in the interest of California's reputation, as well as in the interest of individual grower, all these unmarketable varieties should be rebuded to produce fruit of the type of the Nectar or seedless. Having had six or eight distinct types on my ranch I have reduced them to two desirable kinds.

Let it be distinctly unlerstood I do not claim any superiority for the Nectar over several others of the same type. I know of four or five names that cover other fruit of just the same type and of equal merit and I endeavored to have them so classed at the meeting of 1901, but the owners of the other names declined.—A. P. Griffith.

Some Winnings

OF THE

Mission View Poultry Ranch

AT THE

Southern California Poultry Show, 1906

WHITE WYANDOTTES—
  PEN—First, Fourth, Fifth.
  COCK—Second, Fifth.
  COCKEREL—First, Third.
  HEN—First, Second, Third, Fifth.
  PULLET—First, Fourth, Fifth.
GOLDEN LACED WYANDOTTES—
  PEN—First.
MAMMOTH BRONZE TURKEYS—
  ADULT TOM—First.
  YEARLING TOM—Second.
  HEN—Second, Third, Fourth, Fifth.
BUFF COCHIN BANTAMS—
  COCK—First.
  HEN—First.
  COCKEREL—Second.
FAVORELLES } ALL AWARDS
LAKENVELDERS }
RING NECK CHINA PHEASANTS—
  PAIR—First.

Also won National White Wyandotte Club Silver Cup on First Pen, also from same club three silk ribbons for First Hen, First Pullet and First Cockerel.

In the White Wyandotte class the competition was the hottest ever on the coast, with 150 entries

Mission View Poultry Ranch

Mrs. G. D. Hubbard, Prop. San Fernando, Cal.

El Oro Poultry Farm

H. H. Holland, Prop.

Fresno, California

Won as Follows

At Alameda:

Four Firsts and One Second, from Six Entries.

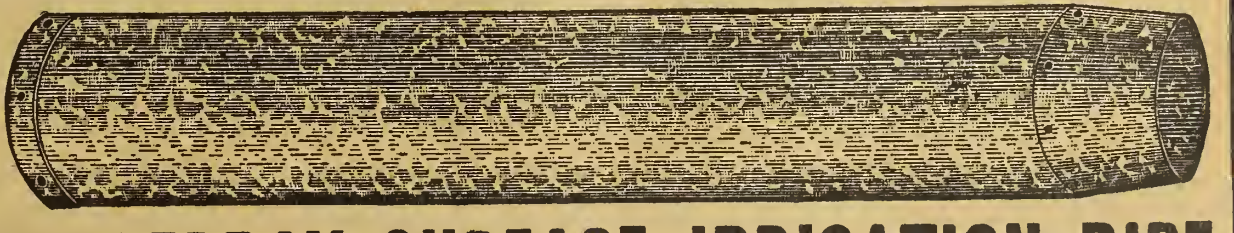
At Fresno:

Fifteen First Ribbons, Three First Pens, Ten Second Ribbons, One Second Pen, Fifteen Third Ribbons, Five Fourth Ribbons, Three Fifth Ribbons.

Fresno winnings brought Three Handsome Cups. Lots of Stock for sale and orders being booked for Eggs from Blue Andalusians, Black Minorcas, Buff Orpingtons, White and Brown Leghorns, Barred, White and Buff Rocks, Buff Cochin Bantams, Bronze Turkeys and White Pekin Ducks.

Stock at $1.50 to $5.00 per Head; Eggs, $1.00 to $3.00 per Setting

Note my prices. No fancy figures. Ranch-grown fowls. Fine Laying Stock is not bred from Scrubs. Mine are bred for size, color, shape and egg-laying qualities. Write at once for quotations on what you may want. A few Pens, Pairs and Trios. Lots of Males. Cut this ad out and tack it up. You may want to refer to it.



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HAD CEASED TO CARE.

Voices of hate make discords in God's air—
But we have ceased to care!
Dark clouds have shadowed all the blue skies fair—
But we have ceased to care!
Within our hearts we live a life supreme—
We overhear the footsteps of a dream,
And life as sweet as faith's own heaven doth seem—
And we have ceased to care!
—Atlanta Constitution.

A Husband in Fifteen Minutes

Jake Stout jogged along the dusty country road on his old gray mare. The sun was hot and he frequently mopped his face with a great red handkerchief.

A little bundle tied up in another gorgeous bandanna hung across the pommel of his saddle. He wore cowhide boots, and his coat, minus buttons, was held together by a cord which approached dangerously near the dimensions of a rope.

His strange dress was a matter of choice, for his saddlebags were well filled with greenbacks, for which he expected to get manv a bargain in the shape of fat, sleek heifers and well-fed shoats.

His reputation always preceded him. He was known as a queer but kindly old fellow, shrewd in business matters, but utterly unsophisticated in all things else. Many a laugh was had at his expense in his absence, but he generally commanded grim respect at close range.

Although outwardly stolid, Jake was secretly pleased with the deference shown him, never suspecting that it was a tribute to his money rather than his personality. As the servility of those he dealt with increased proportionately with his wealth he began to swell with pride and importance; then had come the awakening. He had gone down into the river counties to buy stock, and, true to the instincts of a cattle buyer, hungered for the latest market reports.

One day while rounding up some cattle along the river bank he saw a boat in the middle of the stream. He hailed, beckoning it to approach, and it soon came alongside and ran out its plank.

"Come aboard," yelled the impatient captain. He had stopped as was the custom in those pioneer days, to take on passengers at several out-of-the-way places and was a full day behind on his run.

Jake stood immovable.

"Come aboard, I say,' repeated the captain, accenting the invitation with an oath.

"I don't want to come aboard," replied the stolid Jake, his feet firmly planted where he stood.

"What in the thunder do you want, then," roared the enraged captain.

"I want to know what fat's worth in St. Louis," was the calm reply, whereupon the captain's entire vocabulary of choice oaths and imprecations was hurled at the enterprising cattle buyer.

As the little boat, puffing and panting, backed off, Jake shouted:

"All right; it's your turn now; but jist let me ketch you and your ole boat up at Snaghook an' I'll give you blazes."

As Snaghook was several miles inland, this was greeted with a loud guffaw from the deck hands and the captain alike.

It was all lost upon Jake, however, who in righteous indignation stalked toward his horse, mentally consigning the unobliging captain to parts unknown, and still wondering about the price of "fat"

Another time he bought up all the cattle for miles around and started to drive them to St. Louis.

The news spread ahead of him, and as Jake's drovers neared town, the market, which had been high, suddenly and mysteriously dropped.

There was much secret exultation, for the prosperous man has enemies in country districts as well as on Wall Street; but Jake also had friends, and the news of the market reached him. He immediately stopped, stationed buyers on every road entering the town, and bought every animal traveling cityward. Very soon the market was stronger than it had been for years. Then he unloaded, reaping a fortune, much to the chagrin of those who had planned his ruin.

* * *

On this summer day, however, as he toiled up one clay hill and down another, no such trifles disturbed him. He had weightier matters to consider.

His sister, who had been his housekeeper for many years, had left him. His big house was lonely, and he must fill her place. How could he do it? He ransacked his brain for plans, but could hit upon none that was satisfactory.

Suddenly an idea struck him. He pulled his horse up short, and his blue eyes twinkled as he exclaimed: "By jacks, I have it! I'll get married." Then, the problem solved, he rode on. But here was fresh trouble. Whom could he marry? Numerous spinsters and widows had looked longingly at the big house on the hill, surrounded by its hundreds of broad acres; but their charms had failed to impress its owner.

"Never mind, he soliloquized. I'll find some one; but she must be smart and spry."

He lapsed into silence, soon to break out again: "Women are funny critters, though, and some of 'em deceive you; if I could only test her aforehand now;"

His test would be to demonstrate her ability as a cook, for Jake attended hurriedly but well to the wants of the "inner man." But to cook well was not enough. In his eyes it was a besetting sin to be slow in preparing a meal. Any woman who had this defect could never hope to rule over the heart and moneybags of Jake Stout.

With a quick jerk he again brought his horse to a standstill. He seemed puzzled. Surely he had forgotten something—but what?

He examined his bundle. It was secure. He even dismounted and inspected his saddlebags, but could find nothing wrong.

Suddenly he realized what was lacking. It was his dinner! Here it was nearing three o'clock and he had not tasted a morsel since four in the morning.

About a mile distance he saw a small house and in a short time had reached it—the home evidently of poor farmers; but the dooryard was neat and well kept, and smoke was coming out of the chimney. This augured well for something to eat, so he dismounted and tied his horse.

An old man on the porch watched him curiously as he came up the gravel path. They were off the main road and visitors were few. He had been dreading for some days one man—could this be him? Tears came in the old man's eyes as he arose, trembling, to greet the stranger.

"Howdy," said Jake. "Could I git a bite of dinner and some feed for my horse?"

"I dunno," was the reply in a dazed kind of way. "The old woman is sick and Samanthy is puttin' out the washin." Then raising his quavering old voice he called, "Samanthy, Samanthy, come 'ere."

A woman who had reached that uncertain age when she is no longer young, yet considers it an insult to be called old, soon appeared. She was not prepossessing, being tall, thin and angular. Her face was freckled and her eyes were small and close together. Her hair was thin, wiry, and of that particular sandy color which seems to match the face and give an appearance of baldness. Neat, thrifty and energetic she certainly was, and her parents as well as many neighbors could have attested to her goodness of heart; but these were virtues invisible, and the rural youths of the neighborhood, in their search for wives, had passed by her. Years before she had accumulated the necessary dishes, linen and bedding to begin housekeeping, but never having the opportunity to use them, she had resignedly laid them away with her heart- hungry hopes—and devoted herself to her aged parents.

As the years passed her tone became a little sharper and her face more set and stern. Her voice was unpleasantly shrill as she replied, "Well, father, what is it you want me to do?"

"Here is a man wants his dinner. Kin you get it right away, while his horse is feedin'?"

"Yes, if he can do without meat. We have none unless I kill a chicken."

Jake moved uneasily in his seat. His mouth watered for chicken, but habit had made him a miser in regard to time spent at meals, so he said, "No, I don't want it unless you kin git it quick. Jist give me a snatch of anything handy."

The two men started to feed the horse and Samanthy returned to the kitchen. In fifteen minutes she called Jake to his dinner. This did not surprise him, but when he saw chicken fried crisp and brown he gasped and held up his hands in astonishment.

"You didn't kill and cook that chicken in fifteen minutes?"

"Yes," was the blunt reply.

"Are you married?" he asked.

"No,' came in a sharper tone.

"Would you like to git married?" he continued.

Samanthy's small eyes for once grew large, but keenly alive to the main chance, she stammered out, "Yes."

"Well, then," said Jake, "ef you kin git ready as quick as you cooked this chicken you kin git on the horse behind me and we'll go over to Plankville and have the justice tie the knot."

"But," said the excited Samantha, "I couldn't leave father and mother. They have no one in the world to take of 'em but me."

"Never mind that," was the cheerful reply. "We'll take care of the ole folks. I allers liked ole people, anyhow."

As she started to leave the room he said:

"You ain't very purty, but I never went much on looks, nohow. I've been lookin' for a smart, peart woman, an' you seem to fill the bill; so git ready while I eat a bite."

Samantha needed no second bidding and soon mounted behind her future "lord and master," feeling considerably elated that she had distanced all other woman by winning a husband in fifteen minutes; she had yet to learn the value of her prize.—Marion Wallace.

THE DEARTH OF MEN.

From nearly every side comes the plaint of maids and matrons that desirable men are scarce. Ned Greenway's affair was perhaps the most conspicuous exhibit of the dearth of beaux, and there have been others. The forlorn fair ones say that too many men prefer the supper-room and the sipping of wine to the more gallant activities of the entertainments they attend. Worse yet, they do not attend at all, in as goodly number as might be. In conseouence, there has been not a little searching in the highways and byways for more male material. Young men have been shanghaied for some of the smartest events who would not have been thought of a few years ago. Indeed, some of the new found gallants, quite worthy and respectable youths, no doubt, whose names appear on the assembly and cotillion lists are all but impossible. The man-famine is such that almost any young would-be swell who can wear a dress suit without consciousness, not severely mangle the English language, and avoid down-right boorishness, may hope for the entree almost anywhere, save in a few, modest, exclusive affairs usually held in private houses.—San Francisco Argonaut.

BE ON THE SAFE SIDE.

There is no brain so brilliant that alcohol cannot master. There is no body so strong that it is impossible for poison to effect it. There is no will so powerful that it can say to a bad habit, "Thus far and no farther." The only safe course is to keep from forming habits that degrade, to let poison alone, to refuse to give alcohol the chance to cloud and confuse the brain Why not be on the safe side?

OPIUM and Whiskey Habits cured at home without pain. Book of particulars sent FREE. B. M. Woolley, M.D., Atlanta, Ga., 103 N. Pryor St.

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Cookery Recipes

Sponge Cake.

Three eggs, 1½ cups flour, 1½ cups sugar, 2 teaspoons baking powder, 2 teaspoons vanilla, ½ cup boiling water. Beat the whites and yolks separately until light, then put together and beat again, sift in sugar a little at a time, add flavoring, flour and baking powder, beat altogether, last stir in hot water; bake in two layers and ice.

* * *

Blackberry Cake.

Six eggs beaten separately, 2 cups sugar, 1 cup butter, 4 cups flour, 2 cups blackberry jam, 1 cup buttermilk, 2 small teaspoons soda in milk, 4 teaspoons alspice, 4 teaspoons of cinnamon, 1 grated nutmeg, 2 teaspoons of cloves; put the 2 cups of jam in the last thing.

* * *

Boston Cream Candy

Three cups white sugar, 1 cup syrup, 1 cup cream; boil until it forms a soft ball when dropped in cold water. Just before taking from stove stir in 1 cup chopped nuts; stir until cool; spread on buttered plates and cut in squares.

* * *

Oyster Patties.

One quart of cream, 1 quart of drained fresh oysters, wash and cut each in two; let cream come to a boil, season with salt, pepper and butter size of egg; thicken it like cream. Fill patties and serve hot.

* * *

Potato Cake.

One cup butter, 2 cups sugar, 2 cups flour, 1 cup mashed potatoes, ½ cup milk, 4 eggs beaten separately, ½ cup grated chocolate, 1 cup English Walnuts, 1 tablespoon cinnamon, 1 tablespoon cloves, 2 tablespoons baking powder, ½ tablespoon nutmeg, 1 teaspoon vanilla. This is a delicious cake.

USES OF COAL OIL.

A few drops on your dusting cloth will brighten your furniture, as well as prevent dust flying from the cloth.

One tablespoonful added to each boilerful of water will lessen labor as well as whiten your clothes when washing.

A few drops added to your boiled starch will make ironing easier.

A few drops on a hinge or roller which has formed a bad habit of squeaking will insure a speedy cure.

A few drops added to the water with which windows are to be washed will save time and labor.

Dip the fingers in the oil and rub he throat to give relief from sore hroat.

Saturate a cloth in the oil and rub he rollers to clean a clothes wringer quickly.

Saturate a cloth with the oil to clean the sink, bathtub or basin which has become greasy and discolored rom use.—Woman's Home Companion.

OILED AND PAINTED FLOORS.

If you have never had your kitchen floor painted, do not allow another summer to pass without doing it. A woman can do the work. Paints of any color may be bought already mixed, and are so inexpensive, while the amount of labor saved is so great that we often wonder why there should be a kitchen floor in the land that is not painted.

Scrub the floor clean and let it dry, then give it two coats of paint, [illegible]ing [illegible] coat plenty of time to dry. A little Japan dryer added to the paint will hasten the drying, which is important when one needs to use the room all the time. It is usually better to do the painting in the evening after the supper dishes are washed and leave the doors and windows open. If not quite dry in the morning, and you cannot cook the breakfast in some other room, lay boards across where you walk the most to keep it from being tracked. If you prefer an oiled floor to a painted one, get a gallon of linseed oil and heat a quart of it until almost boiling, and apply it with an old paint brush, which should be clean, of course. Two coats are usually needed.

The care of an oiled or painted floor is important if you would keep it in the best condition. Mop the floor once a week, using a suds of good soap; rinse it with clear water and wipe dry. It is never necessary to use a scrub brush, and the water should not be hot.—Painter.

THE SECRETS OF LONG LIFE.

We have not a doubt but that our earnest, true-hearted girls wish to live long lives, but we wonder if they realize that now is the time for laying the foundations to such a life. Here is something that may set them thinking:

You sometimes see a woman whose old age is as exquisite as was the perfect bloom of her youth. You wonder how this has come about. You wonder how it is her life has been a long and happy one. Here are some of the reasons:

She knew how to forget disagreeable things.

She kept her nerves well in hand, and inflicted them on no one.

She mastered the art of saying pleasant things.

She did not expect too much from her friends.

She made whatever work came to her congenial.

She retained her illusions, and did not believe all the world wicked and unkind.

She relieved the miserable, and sympathized with the sorrowful.

She never forgot that kind words and a smile cost nothing, but are priceless treasures to the discouraged.

She did unto others as she would be done by, and now that old age has come to her, and there is a halo of white hair about her head, she is loved and considered. This is the secret of a long life and a happy one. —Girl's Companion.

THE COON AND THE TIGER.

A small dark coon was walking one day in the desert for the sake of his appetite when he ran full tilt into a large and comparatively healthy tiger. The coon realized, instinctively, that he would require to exert all his wits to keep things going on as satisfactorily as usual. And so he spoke up in a perfectly candid way.

"Good morning," he said to the tiger, who did not answer but looked at him roguishly.

"The desert air is fine this morning," continued the coon, and the tiger smiled in a good humored manner.

"But I derive no benefit from this fine air," continued the coon, "for I am ill. Yes, I have taken poison!" he went on, with a feverish look in his deep, brown eyes. "Last night I ate a pailful of strong arsenic which I mistook for whitewash. My physician tells me that I am so saturated with poison that if anything only touches me nothing could postpone immediate death. If, you, for instance, touched me with your teeth only, it would kill you instantly. Nothing could postpone death."

"Why wish to postpone death," said the tiger, cheerfully. "I may tell you that I consider this meeting sheer good luck, for I am tired of life and came out to commit suicide. Kindly stand still, so, while I spring. A little further to the left, please, Thank you!"—Punch.

THE COUNTRY WEEKLY A POWER.

A writer in the Review of Reviews sums up the qualities of the country weekly paper as follows: "Each copy is not only read by the people credited to the ordinary paper but twice or thrice that number. In many instances subscribers pass their papers on to less fortunate homes. These publications are pre-eminently the home papers of newspaperdom. They are not superficially scanned while men travel to business and left to brakemen to gather up. They go directly into homes and the reading of them is a duty as well as a pleasure. Hence their peculiar value as moulders of public opinion and as advertising mediums."

THE FOXY ONE.

Mrs. Knewbryde was in tears.

"You have forgotten already," she sobbed. "You d—d—don't care for me any m—more! You——"

"But what have I forgotten, dearest? Tell me!"

"This is my b—birthdav, and you haven't brought me any present, or said a w—word about it, and——"

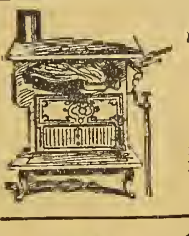
"Nonsense, darling, I remembered it perfectly, but I didn't want to remind you that you were a year older."

And peace and happiness reigned again.—Cleveland Leader.

DO NOT FRET.

I've learned as days have passed me
  Fretting never lifts the load,
And that worry, much or little,
  Never smooths an irksome road.

For you know that somehow, always,
  Doors are open, ways are made,
When we work and live in patience
  Under all the crosses laid.--Selected.



BURN AIR AND SAVE FUEL

You can do it with the

HAGUE IMPROVED DOMESTIC OIL BURNER

It burns more air than any other burner on the market. Can be fitted to stoves, ranges, furnaces, and all kinds of heating systems. Simplest and most economical burner on the market. If you want the most heat for the least money, write for information to

Hague Domestic Oil Burner Co., 810 So. Spring St., Los Angeles, Cal.

Security Savings Bank

LARGEST SAVINGS BANK IN SO. CALIFORNIA

Those unable to visit the bank in person may open their accounts and transact all their banking business with this institution by mail.

4% INTEREST PAID ON TERM DEPOSITS

HERMAN W. HELLMAN BUILDING, LOS ANGELES, CAL.

Write for booklet "A" on banking by mail. Rainfall Chart and 112-page Atlas sent free.

Union Bank of Savings

RESOURCES $3,831,680.29

3% Interest Paid on Ordinary Deposits 4% Interest Paid on Term Deposits

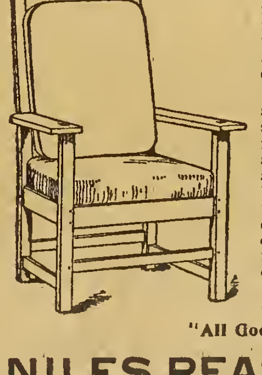
Increase in Deposits since June 30th, 1904 $1,300,000.00.

Safe Deposit Boxes from $4 yearly up.

223 South Spring St. Los Angeles, Cal.

"Dependable Furniture at a Fair Price."

The Best Old Mission Furnitue



In the designing of the best true Old Mission furniture, all attempts at artistic and fancy decorations must give away to plain, simple lines. This furniture is designed for strength and durability, and on account of its simplicity it is artistic and most desirable.

Gustav Stickley, the famous craftsman, is the designer and manufacturer of the finest line of Mission furniture on the market. All of the pieces from his shops are true to the Old Mission styles and are made entirely by hand by the most skilled artisans. We are sole agents here for this superior line and now have the finest showing of Mission furniture in the city. We have this furniture in the dark mahogany and in the light and dark weathered oak. All of the oak pieces are put through the fuming process and are given the genuine fumed oak finish.

We invite you to inspect our showing of this furniture.

"All Goods Marked in Plain Figures."

NILES PEASE FURNITURE CO.

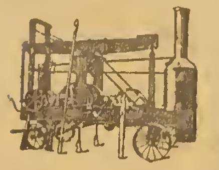
439-441-443 SO. SPRING ST., LOS ANGELES, CAL.

"Did she looked surprised when you proposed?"

"I don't know; I couldn't see her face."

"Why, how was that?"

"She had both arms around my neck before I had finished."--Houston Post.



WELL DRILLING MACHINERY

Portable and drill any depth by steam or horse power. 42 Different Styles. We challenge competition. Send for Free Illustrated Catalog No. 13.

Kelly & Taneyhill Co
13 Chestnut St., Waterloo, Ia

WOODMANSE STEEL WINDMILL

BEST MILL ON EARTH

On account of its removable bearings will pump more water than any mill on earth.

F. H. OSLER, POMONA, CAL., AGENT FOR PACIFIC COAST

A Sharp Razor

Makes Shaving Easy

It is a pleasure to shave when your razor is sharp. With "Every Man's Dry Hone" you can give your razor a keen cutting edge with a few strokes. It is a perfect hone, made for home use, and guaranteed to give satisfaction or money refunded. No water or oil necessary—self lubricating. Always ready.

Mailed on receipt of $1.00. Send in your order now, while you are thinking about it. Be ready for your next shave.

REDLANDS HONE CO. 70 Orange St., Redlands, Cal.

LOS ANGELES PACIFIC R. R.

The Balloon Route

Takes In All New Towns

In the frostless belt from Los Angeles to Santa Monica canyon

Takes In All Beach Resorts

From Santa Monica Canyon to Hermosa and Redondo.

Takes In All Suburban Towns

Between Los Angeles and the ocean.

Takes You In

And gives you more for your money than any ride in the world.

General Offices:
316 W. Fourth St., Los Angeles, Cal.
E. P. CLARK, Pres. T.R. GABEL, General Supt.

A NEW TRAIN

The Los Angeles Limited

DAILY BETWEEN

Los Angeles & Chicago

66 HOURS VIA

SALT LAKE ROUTE
UNION PACIFIC
CHICAGO & NORTHWESTERN

A Solid Through Train consisting of Standard and Tourist Sleepers, Dining Cars, Library-Buffet and Observation Cars, steam heated and electrically lighted throughout.

ALL TRAINS RUN THROUGH SALT LAKE CITY.—THE SCENIC TRIP OF AMERICA

Information and literature gladly furnished at our City Ticket Office, 250 So. Spring St., or First Street Station. Phones Main 352-4095, Home 352-490.

SALT LAKE ROUTE

E. W. GILLETT, Gen. Pass. Agt.
T. C. PECK, Asst. G. P. Agt.
Los Angeles, Cal.

Los Angeles Markets.

Los Angeles, Jan. 11, 1906.

Vegetables have again advanced under the influence of the continued dry weather and keen demand, and quotations on some varieties have doubled during the week.

Eggs are easier and a further decline is expected.

Butter is firm as quoted, and with hay advancing and no pasture, a further rise is quite possible.

Oranges are moving slolwy at bottom quotations on the local market. Deciduous fruits are in nominal supply.

Butter.

B. of T. Creamery, per roll	67½@70
Valley Creamery, fancy	67½@70
Valley Storage	60
Cooking	20@22

Cheese.

Cal. 3-lb hand	19½
Cal. Young America	18½
California Anchor	17½
Northern	16@17
Domestic Swiss	19@20
Imported do	26½@27

Eggs.

Eggs, Fresh Ranch	31@32
Eastern and Storage	25@26
Seconds	21

Poultry.

Fryers, 2½ lbs	16
Broilers, under 2 lbs., per lb	17
Young Roosters, per lb	16
Hens, per lb	15
Ducks, per lb	13
Geese	13
Turkeys	19

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock:

Hogs, 200 lbs, per cwt	5.75
Prime Steers, cwt	3.50
Cows, cwt	2.85
Calves, cwt	4.50
Sheep, ewes, per head	4.00
Lambs, do	3.25
Wethers, per head	4.50

Potatoes.

Northern, per sack	$1.50@1.75
Locals, per cwt	1.10@1.25
Sweets, white, per cwt	1.00
Sweets, yellow	1.25
Sweets, red	95

Vegetables.

Onions, Silver Skins, cwt	1.40
Onions, yellow, cwt	1.65
Garlic	7@10
Cabbage, per sack	75@80
Cauliflower, per doz	40@60
Lettuce, per crate	1.50
Bell Peppers	10@12
Wax Beans	10@12
String Beans	10@12
Cucumbers, per box	2.00@2.25
Beets	40
Green Onions, doz bunches	20@25
Corrots, doz. bunches	30
Turnips, doz. bunches	30@40
Celery, per doz	32½@40
Peas, per lb	6@8
Egg Plant	8@10
Chili Peppers, green	2½
Chili Peppers, dry	18
Tomatoes, local	75@1.00
Parsley, per doz. bunches	60
Summer Squash, box 20 lbs	1.00

Citrus Fruits.

Lemons, Standard	1.50
Lemons, Choice	2.00@2.25
Lemons, fancy	3.00
Grapefruit	1.75@2.00
Seedless	3.00
Navels	1.25@1.50

Fresh Fruits.

Apples, Bellefleur	1.65@1.75
Fall Pippins	2.00@2.50
Apples, W. W. Pearmain	1.25@1.50
Strawberries, per crate	4.50
Raspberries	20
Guavas, per basket	4
Persimmons	4@6
Red Emperors, per lb	8
Pears, Winter Nellis, per lb	4
Pears, Bartlett	5@7
Pomegranates, 20 lb. box	75
Casaba Melons, large crates	2.25@2.75

Dried Fruit.

Apples, evaporated, ex ch, 10; ch, 9.

Apricots, ex ch, 11; 12; ch, 10½.

Peaches, fv. 12; ch, 10.

Santa Clara Prunes, 30-40, 9c; 40-50, 7½; 50-60, 7c; 60-70, 6½.

Loose Muscatel Raisins, 2-crown 5½; 3-crown, 6; 4-crown, 6½.

Beans, Dried.

Limas	5.00@5.50
Pinks, fancy	2.50@2.65
Lady Washington	3.00@3.10
Small White	3.50@3.75
Black Eyes	5.50@6.00

Nuts.

Walnuts, No. 1, soft shell	14½
Do, No. 2	8@10
Do. No. 1, hard shells	12
Do. No. 2, hard shells	10
Almonds, paper shell	15½@16
Almonds, soft shell	14
Peanuts, California	6

Honey.

Honey, comb frames	14@15
White, strained, per lb	6½@7
Amber	5
Beeswax	27

Hay.

Barley	12@14.50
Alfalfa, local	14@15
Alfalfa, Northern	11@12.50
Wheat	14.50@16.50
Tame Oats	14.50@18.50

Grain.

Selling prices of mill stuffs f. o. b. cars L. A., in quantity, are:

Rolled Barley	1.15
Bran	1.30
Feed Corn Meal	1.55
Shorts	1.45
Wheat, per cwt.	1.45@1.55
Cracked Corn	1.50
Oil Cake Meal	2.10
Cocoanut Meal	1.55

San Luis Obispo County Lands. Best and Cheapest in the State. Rainfall abundant. Colony Lots, Farms, Orchards, Stock Ranches, Town Lots, Business Openings, Mines. Offices opposite R. R. Depots, Oceano and Arroyo Grande, Cal. Call or write for price list.—Beckett Realty Co.

The fall-planted family garden is a rare gem on many farms—so small that it cannot be found. "He who provides not for those of his own household is worse than an infidel."

San Francisco Markets.

San Francisco, Jan. 10, 1906.

Butter.

No important changes concerning either prices for the various grades of butter or the tone of the market were noted yesterday, and general business was restricted mainly to the filling of routine needs.

Fresh California extras	30
Fresh California, firsts	27
Fresh California, seconds	23½
Eastern extras	25½
Storage, California, extras	25

Cheese.

California, new	15
California firsts	13½
California seconds	12½
Eastern, Cheddars	15½
Storage, California	13½
Storage, Eastern	15

Eggs.

There was not much interest in Eggs, and prices for Ranch receded one point, while rates for Store descriptions were two points lower. Offerings were liberal, but buying was cautious.

Eggs, fresh ranch	32
Firsts	30
Seconds	28
California Storage	28½
Seconds	23½

Poultry.

Aside from Fryers and Broilers, which were in light supply and sharp request at the advanced prices, the general market for Chickens was easy, and the demand of a slow jobbing character. The sixth carload of Eastern stock for the week was placed on sale, and offerings were disposed of at rates fully $1 a dozen lower than last week.

Old Roosters, per doz	4.50@5.00
Young Roosters, per doz	6.00@7.00
Hens, per doz	4.50@6.50
Ducks, per doz	5.00@6.00
Turkeys, per lb	18@20
Geese, per pair	2.00@2.50

Live Stock.

Strong markets prevail for Live Stock offerings and operators report a spirited trade passing in all departments at full quotations, though prices remain the same as a week ago.

Hogs, per lb., 80 to 130 lbs	5@6
Hogs, per lb., 130 to 250 lbs	6c.
Hogs, per lb., 250 to 350 lbs	5½c.
Hogs, per lb., rough heavy	3½@4½c.
Prime Steers, lb	7@7½
Cows, lb	5@5½
Calves, lb	4½@5
Sheep, ewes, per lb	4@4½
Lambs, per head	5.00@5.50
Wethers, per lb	4½@5

Potatoes.

River Burbanks	50@85
Oregon Burbanks	85@1.10
Salinas Burbanks	1.15@1.60
Sweets, Merced	1.15@1.25

Vegetables.

Onions, yellow, per sack	1.10@1.35
Bell Peppers	12½@15
Chili Peppers	6@7
Cucumbers, per doz	75@2.00
Tomatoes, per box	90@1.25
String Beans	18
Wax Beans	18
Summer Squash, per box	1.00@1.50
Green Peas, per lb	7[illegible]

Citrus Fruits.

Navels, fancy	2.25@3.00
Seedlings	75@1.25
Lemons, standard	75@2.50
Limes	6.00@6.50
Grapefruit	1.50@2.75
Tangerines	1.00@1.25

Fresh Fruits.

Yesterday's market for Fruits was barren of any special or important features.

Apples, per box, extra	1.75@2.00
Apples, fancy	$1.25@1.50
Cranberries, per bbl	15@16
Grapes, per box or crate	1.00@1.25
Pears, per box, Winter Nellis	2.00@2.50

Beans, Dried.

Limas	5.00
Pinks	2.00@2.15
Small Whites	3.15@3.25
Black Eyes	4.50@4.75
Bayos	3.50@3.75
Red Kidney	$3.25@3.75
Horse Beans	$1.25@1.85

Hay.

Barley, new	$8.00@11.00
Alfalfa	7.50@12.50
Wheat	11.00@16.50
Oat	7.00@12.50

Grain.

Wheat	$1.33½@1.36¾
Barley	1.22
Corn	1.37½
Oats	1.50@1.65
Rye	1.45@1.52
Rolled Barley, per ton	$26@27.50
Bran, per ton	19.50@20.00
Feed Corn Meal, per ton	29.50@30.50
Middlings	½ 26@30
Cracked Corn, per ton	30@31
Oil Cake Meal, per ton	37.00
Cocoanut Cake, per ton	22.00

Hops.

Grades	8@11

CITRUS MARKETS

New York Market.

New York, Jan. 9.—Nine cars sold at auction today. The market is unchanged. The weather is favorable.

NAVELS.

Santa Fe, Or. Co. Fruit Ex.	$1.70
Royal Knight, xf, S. B. Co. Fruit Exchange	2.25
Sequoia, fy, Semi-Tropic Ex.	2.10
River	1.90
Independent, fy, Highland	2.00
Independent, xf, Highland	2.20
Trophy, xf, C. C. U., Highlands	2.00
Sunflower, xf, C. C. U., Redlands	2.15
Old Oaken Bucket, or, Houser Bros.,	1.80
Rialto Girl, fy, F. P. Corson	2.00

BOSTON MARKET.

Boston, Jan. 9.—Four cars sold at auction today. The weather is fine.

NAVELS.

Tahoe, xf, Redlands O. G. Assn.	$2.30
Iroquois, xc, Redlands O. G. A.	2.20
West Highlands, xf,	2.40
West Highlands, fy,	2.30
Mallard, fy, C. C. U., Pomona	1.95
Artillery, xc, C. C. U., Fillmore	1.75

CLEVELAND MARKET.

Cleveland, Jan. 9.—Five cars of citrus fruit were sold at the auction yesterday.

NAVELS.

Sequoia, fy, Semi-Tropic Ex.	$2.20
Manzanita, xc, Semi-Tropic Ex.	2.00
Goddess of Fruit, xf, San Antonio Exchange	1.95
Jewel, ch, San Antonio Ex.	1.70
Palm Tree, ch, A. H. Fruit Co.	2.05
Isis, xf, F. H. Speich & Co.	1.65

AMERICAN WIRE FENCE.

There are many kinds of wire fence, but the requisites are first that it shall be strong to hold up against and withstand all extreme strains, and then flexibility, to take all ordinary shocks, give and come back to its original shape, so as to not stay sagged or bent.

These two very important qualities are found in the superlative degree in fence made by the American Steel & Wire Co. Their fences are not only constructed from extra long fibre steel wire, strong and flexible, but this is galvanized heavily to protect it from the weather and prevent rusting out.

This concern operates thirty big plants and all make very known kind of wire, from the stiffest, required in piano manufacture, to the finest—almost silky—fibre which is woven into wire cloth. With such extensive facilities, and opportunity to observe their products under all sorts of conditions, it is not surprising that they should be able to produce wire surpassing in quality all other kinds.

And the enormous quantity they make enables them to reduce the cost to a point where they can sell the very best wire at prices very much lower than other concerns have to ask.

Steel is the very best material for fences because it is the strongest substance made. Its invention and development have made possible modern skyscraper buildings, bridges of hitherto impossible length and height, and transportation in trains and steamships to which you trust yourself with every confidence in their strength and capacity to insure your perfect safety.

Hence it is the safest and most reliable material for fence. And, if it is properly galvanized and woven and put up as it should be, it will last for many years and give your land permanent protection.

And American fence—fence made by the American Steel & Wire Co.—is so constructed that you can adjust it to any unevenness in your ground and maintain uniformity throughout. It's lateral wires are big, continuous pieces, very tough and durable; while the upright, or stay wires, are hinged upon the lateral wires so that there can be no giving way. This makes a perfect square mesh fence.

American fence wire is annealed as it is drawn, which makes it stronger than ordinary fence wire. American fence is sold through dealers to give buyers the benefit of personal attention; but, if your dealer does not keep it, put off buying until you can write the makers and get a catalogue. That will enable them to see that your interests are properly looked after.

Address the American Steel & Wire Co. at any of their branch headquarters—Chicago, New York, Denver or San Francisco.

CARLOADS OF NURSERY STOCK.

Stewart Bros. are unloading this week another load of beautiful looking trees from the Oregon Nursery Co. The size and appearance of these trees are remarkable and attract much attention. The Stewarts say that the season looks as if the demand will be very great for all kinds of deciduous stock.

The company is now located at 712 South Spring street, Los Angeles.

DOKE'S REMOVAL.

The Doke Stock Food Company which manufactures the egg foods and "Lice Dope" which has been so successful on many a poultry ranch, has removed to 711 So. Main street, Los Angeles. The new quarters are far more commodious, more central and better adapted to the general business of this growing concern.

"The hen that lays is the hen that pays" is the slogan of the company, and the foods to make them lay is what they sell. Mr. Doke showed us many testimonials of pleased customers who have used the foods and found them satisfactory. "The best ever," is the way many express it."

Write the Doke Co. for further particulars of the goods.

Cultivator Advertising Pays.

Pasadena, Calif., Jan. 2, 1906.

Cultivator Pub. Co.

Gentlemen:—Stop my adv. at once and do not let it appear this week, as I am all sold out. I had good luck with your paper and am well pleased. May have more work for you in the future.

Yours,
F. S. LEE.

The mail order poultry supply house of the Jubilee Incubator Company, Sunnyvale, Calif., offers opportunity for all our poultrymen to purchase all necessary foods and supplies for poultry at the very lowest spot cash prices. They have recently issued a magnificently illustrated catalogue which they call "The Jubille Book." It consists of 80 pages illustrating and describing the well known Jubilee Incubators and Brooders and the Jubilee brands of poultry supplies. It is sent free upon request.

Farmers and others who may be interested in telephones will acquire some valuable information by writing to the Stromberg-Carlson Telephone Co., Rochester, N. Y., for their booklet No. 71. This firm is making a specialty of rural telephones and much valuable information will be obtained by a perusal of their literature.

Many of our readers will be interested in the information contained in the 1906 Seed Annual just issued by the great seed merchants, D. M. Ferry & Co., Detroit, Mich. It will be sent free to all applicants and is well worthy a careful perusal on account of the valuable information it contains. In writing them kindly mention you saw their advertisement in the Cultivator.

The Iowa Seed Co., of Des Moines, Iowa, send a finely illustrated catalogue of over 100 pages (with colored plates). devoted to descriptions of fruits, flowers and vegetables, the most ornate and comprehensive this company has issued.

VACANT LOT CROPS VALUABLE.

Philadelphia's public school gardens, which have been conducted this season on the vacant lots of the city, have flourished under the patient cultivation of more than 2,000 boys and girls, so that not only have the numerous unsightly lots been made attractive, but at least 850 poor families have ben aided in the struggle for existence. It is now estimated that the value of the vegetables raised on these 242 acres of school garden land will exceed $50,000. All this is aside from the educational value of the work itself to the little gardeners. In our California villages it would be an easy matter to maintain school gardens of vegetables every month in the year.

"My husband has asked me not to buy him any Christmas present this year."

"Are you going to?"

"Oh, yes. I need some things that I can't get any other way."—Cleveland Leader.

GOPHER DISEASE.

A. A. W., Beaumont, wishes further information regarding the infectious gopher disease published in our issue of December 29. The experiments noted were made in France and we do not know that anybody, as yet, has taken up the work in this country.

Waite, Bailey & Lynch, buy, sell, exchange, repair and install gasoline and steam engines, boilers, air compressors, power pumps, etc. Otto gasoline engines, all sizes, to 200-H. P., better built, more economical, therefore superior to all others; prices and terms that will insure due consideration. 943-945 N. Main st., Los Angeles, Calif.

San Francisco Examiner:

BREAST CANCER KILLS MOTHER

Two Sisters and Uncle Cured Without Knife or Pain.

Mrs. Elizabeth McClure of 1503½ Market street, San Francisco, Cal., lost her mother about a year ago after a surgical operation for a lump in her breast. Mrs. McClure and her sister each had a large lump in her breast, which became a poisonous eating cancer. Fearing they would die as did their mother they refused operation.

Hearing of Mrs. Crosthwaite's (954 Arlington avenue, Oakland, Cal.) remarkable cure without knife or pain by a wonderful Pacific Island plant extract, each sister and also an uncle had cancers cured within the same month, and, strangely, without one telling the other. These noted cancer specialists who discovered and use this remedy cure hundreds of cancers that no one but themselves and the patients ever know about. They charge nothing until cured and offer $1,000 if they fail. The cures are made in the privacy of the patient's own home.

Dr. and Mrs. Dr. Chamley & Co. are the doctors who cured Mr. E. J. (Lucky) Baldwin, Arcadia, Cal., of three cancers just three years ago after X-ray had made him much worse. Other physicians thought he could not be cured and would die in a few months. His testimony in his own words is in Dr. Chamley's book, which is the best ever published on cancers. It contains proof that any lump in woman's breast is cancer, also that any tumor, lump or sore on the lip, face or anywhere is cancer.

Dr. Chamley is declared by his patients to be one of the most honest, sincere and kind-hearted doctors they ever knew. He is the best authority in America on the cure of cancers, having cured more in thirty-three years than any other doctor living.

To get the doctor's book free, write to 25 Third street, San Francisco, Cal.

NATIONAL WOOD PIPE CO.

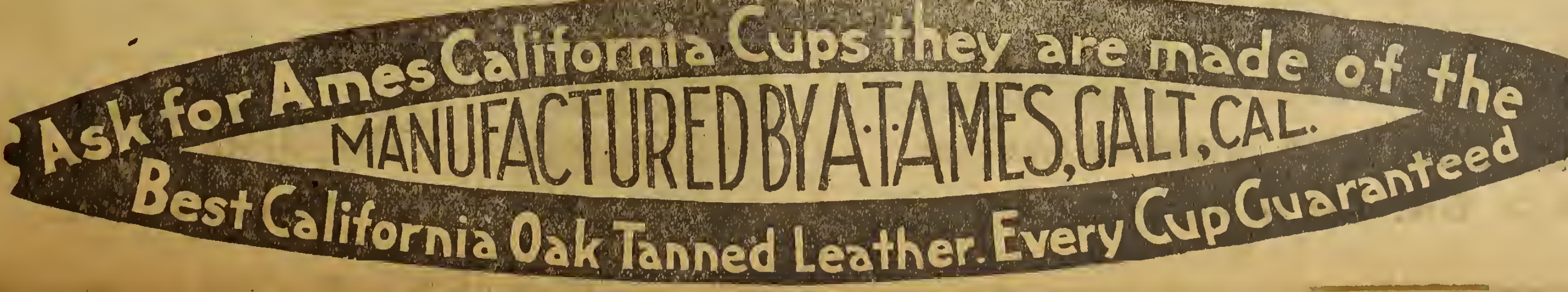
MADE FROM CALIFORNIA REDWOOD OR SELECTED PUGET SOUND YELLOW FIR

WOOD PIPE

WOODWARD PATENT MACHINE BANDED PIPE
WHEELER PATENT CONTINUOUS STAVE PIPE
BORED WOOD WATER PIPE

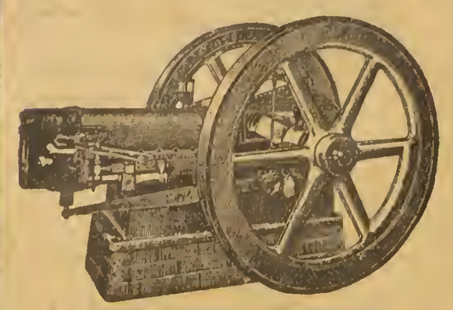
Puget Sound Office, Olympia, Washington
Los Angeles Office, cor. Sixth and Mateo Sts.
San Francisco Office, 301 Market St.

A booklet, "The Whole Story About Wood Pipe," mailed free upon request


Ask for Ames California Cups they are made of the
MANUFACTURED BY A.T. AMES, GALT, CAL.
Best California Oak Tanned Leather. Every Cup Guaranteed

THE WESTERN GAS ENGINE

"From Factory Direct to User"



THE WESTERN ENGINE
Maximum Power at Minimum Cost

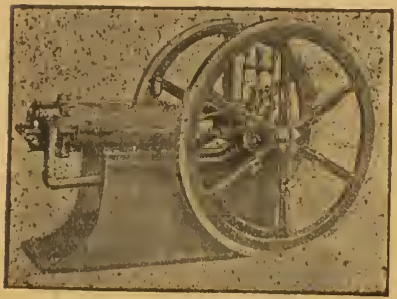
Designed and built by Western experts for Western use with Western fuel. In construction the Western embodies many original, yet practical ideas, which place it in advance of any other make on the market today. The simplest, strongest and best engine for

Irrigation, Power and Electric Plants.
Any Size from 5 to 500 H. P.

Burns cheapest fuel—gasoline, distillate or crude oil—with a saving of 20 to 40 per cent over any other style. **Send for illustrated Catalogue** fully describing every detail of construction; tells **how** and **why** the Western excels all others; it gives the facts—the proof. Learn what Western engines are doing for others. Send your name today ask for latest issue, A6.

WESTERN GAS ENGINE CO.
908-932 N. MAIN ST. LOS ANGELES, CAL.

TRIED FOR MANY YEARS



And now stands without an equal. That is the verdict of many who have used the

WHITE & MIDDLETON ENGINE

Complete Irrigation Plants Installed.
Estimates gladly given,

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602 North Main St. Los Angeles, Cal.

Now Is the Time to Look Over Your Old Plows

Consider them worn out. Come in and see our line of Syracuse Goods, consisting of Syracuse
Disc Plows. Solid Comfort Jr. Sulky,
Solid Comfort Gang, Steel and Wood Beam,
Walking Plows, Steel and Wood Beam Chilled Walking Plows
and the old reliable
Fosmir and Stockton Reversible Gang Plows,
the California Disc Plows. Three Gang and larger,
manufactured by us to stand and do the hardest kind of work

Do not fail to see this plow before buying, also Syracuse Steel Lever Harrows, Spring Tooth Harrows, etc. Have you seen the best Wagon on the market? You have not unless you have cast an eagle eye on the Harrison; and remember the location, which is the important part

L. A. MARTIN & SON 137-143 WILMINGTON ST., formerly Old San Pedro St., LOS ANGELES

ROOFING
SHEATHING
BOX LINING
TRAY PAPER
for Drying Fruit
and
FLUME LINING

PAPER

MANUFACTURED BY
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NO, THIS IS NOT AN ARTESIAN WELL, BUT

AN IRRIGATION PUMPING SYSTEM
SUPPLIED BY
S. J. SMITH MACHINERY CO.
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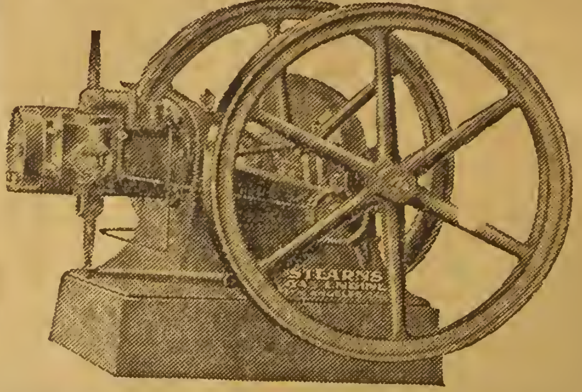

Has many points superior to any other engine.

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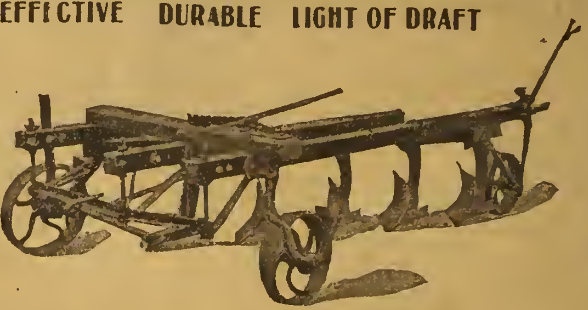
EFFECTIVE DURABLE LIGHT OF DRAFT



This is our regular Plow and Land Shifter and Rear Lever. Land Shifter simple and durable. It is in easy reach of operator and there is no danger of wheel running over foot.

Houser & Haines Mfg. Co.
Stockton, Cal.

The New Pomona Pump

We must not attribute all of the success of the Pomona Pumps to the Pump Head or the part of the machinery above the ground, for there is another part just as essential, and this is the cylinder and valves. Our cylinders are made of the best seamless brass tubing made to our order in the East. The valves are made of the best phosphor bronze and are cast and finished complete in our shop.

These valves are of the most improved pattern, have cone-shaped clappers with ground metal seats. There is only one moving part in each valve and we have never had them clogged with sand. The plungers are furnished with three cup leathers, each made from the best oil tanned leather.

With the New Pomona pumphead using a quick return motion and lap in the plungers, these valves have sufficient time to seat before taking up the load of the water column, consequently there is no hammer or jar. The Pomona Pumps are taking the lead for irrigation purposes and are rapidly displacing pumps of inferior design and workmanship.

Send for catalog and estimates for our new plants.

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POMONA, CAL.

CALIFORNIA CULTIVATOR

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Los Angeles **JANUARY 19, 1906** **San Francisco**

HUMBOLDT COUNTY RANCH.

Today, while cattlemen in the Middle West are stabling their stock and feeding expensively, the California ranchman has his in pasture, which, with the recent rains, will soon be high enough to support his stock without assistance.

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SUNSET Via New Orleans and El Paso

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Pullman Vestibuled Trains Daily. Personally Conducted Tourist Excursions via all routes every day in the week at Reduced Rates. The SOUTHERN PACIFIC gives you choice of many routes from the northern boundary of the United States to the Atlantic Coast, so that you may go one way and return another, with varied scenery and climatic conditions.

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The peer of all with 14 years' record for durability and efficiency.
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Well Rigs, Hydraulic Jacks, Perforator Knives, Slip Sockets, Rope Sockets, Casing Spears, Mouse Trap Pullers, Subs, Sand Pump, Mud Scows, Head Block Springs, Starter Rings, Link Jars, Revolving Jars, Bits, Diamond Drills, Fish Tail Drills, Wrenches, Temple Screws, Stems, Sinker Bars, Jokers, Well Caps, Swedges. We keep Standard Reins, Rings, Clay Cutters, Etc., constantly in stock, and can fill orders for Sand Pumps promptly.

ASK WELL PIPE MANUFACTURERS FOR THE VULCAN STARTERS. WE HAVE ALL SIZES.

Vulcan Iron and Tool Works, 917-919 North Main St., Los Angeles, Cal.

$3.75 Per Dozen for Six Weeks Old Chicks

ADVANTAGES OF COULSON'S SPECIAL READY MIXED CHICK FEED

PUT SOME LIFE INTO THEM

You who are raising chickens and turkeys, and more especially young chicks. Don't you think it a good idea to PUT SOME LIFE INTO THEM, that is giving them food that will MAKE THEM STRONG AND HEALTHY?

You don't want to see your chicks droop around as though they were HALF ASLEEP, and then find every morning that 15 or 20 of them have KICKED THE BUCKET.

Coulson's Special Dry Chick Feed puts the life into them and makes strong, healthy chicks.

You know there is something in the heart of a grain of wheat or corn, that the mere heat of the soil makes it sprout into a living, growing plant.

You know there is something in the yolk of an egg, that the mere heat of hatching turns into a living chick. Sometimes there is not sufficient of the life-giving quality in the egg and the chick dies before it is hatched; and somtimes they hatch out more dead than alive, and the chicks drag out a miserable existence for a few days and finally give up the struggle, stretch out their legs and die.

There are many secrets in nature, but it is written in the Bible, "Seek and ye shall find." Suppose you should find this "something" that you could just feed it to the young chicks and give them STRONG VITALITY, so that they would grow—to beat anything you had seen before.

IT'S THE LIFE GIVING QUALITIES in Coulson's Food—THAT'S WHY Coulson's Special Dry Chick Feed raises the NICEST, LARGEST and HEALTHIEST CHICKS.

That is why Coulson's Food is different from the imitations.

A prepared Chick Feed composed of sound, selected grains broken to the proper size and blown free of dust is the most economical feed for young chicks. One hundred pounds will feed as many chicks as two hundred pounds of ground grain or cracked wheat. Why is it preferable?

The proper feeding of poultry is without doubt the most essential factor in the raising of any kind of poultry for profit.

AT ARMOUR PACKING CO., KANSAS CITY.

Loading cars of 400 bags of freshly cooked and baked hearts and liver meal. The small pieces of cook meat (about the size of a pin head), is used in Coulson's Special Chick Feed It is fresh, sweet and tender, and is great stuff to make chicks grow. If you want to raise a nice bunch of chicks, get a sack of Coulson's Special Dry Chick Feed.

Considerable advancement in the feeding of poultry has been made in the past few years, especially in the feeding of little chicks.

On nearly all the large poultry farms chicks are now started entirely on COULSON'S SPECIAL READY-MIXED DRY CHICK FEED.

SAVE YOUR CHICKS

Keep them from bowel trouble and all ailments incident to the first five weeks. Profit lies in the chicks you raise to maturity—not in the number hatched. Give them a ration that makes healthy, well developed bodies.

Coulson's Special Chick Feed

Contains ingredients that long experience in poultry raising has found best adapted to give nourishment to growing chicks. It is promptly digested; causes no indigestion; keeps the bowels in normal condition. Chicks show increase in weight, strength and beauty when fed it exclusively. Little chicks need no other food for the first five or six weeks. Save your chicks and make good profit.

Remember Mr. Bassett sold broilers only 6 weeks old for $3.75 a dozen.

TRY IT THIS YEAR.

Ask your dealer for COULSON'S SPECIAL CHICK FEED. Tell him no other kind is good enough for you. You want the best, and that's Coulson's.

Special Prizes to users of Coulson's Special Dry Chick Feed.
$500.00 to be given away. Look for a little envelope in every 10-pound sack of Coulson's Special Chick Feed.
Ask your dealer for Coulson's.

Coulson Poultry and Stock Food Co.

Petaluma, California

CALIFORNIA CULTIVATOR

Vol. XXVI—No. 3 LOS ANGELES, CAL., FRIDAY, JANUARY 19, 1906 Subscription $1 a Year

Practical Horticultural Sanitation

By O. E. Bremner.

In the culture of fruit, as in every industry, the older methods have been adjusted or have given away entirely to meet the conditions of a modern community. These improved methods have grown into the very life of California's people and as a result of this enterprise, California is firmly anchored in the security of her natural position in the fruit-producing world, and stands today upon her own resources; for generous Nature bestows her gifts on even those who receive them with reluctant hands, awaiting only the time when, aided by man's feeble devices she causes even the desert places to blossom as a rose and bring forth abundant harvest of golden fruit. The finest of our horticultural products today are, for the most part, the result of years of careful cultivation and selection, and it is reasonable to suppose that such specialized organisms are able to resist the ravages of disease and pests due to unsanitary and unnatural conditions. The problem that confronts the grower today is how to produce absolutely sound clean fruit at the least possible expense. Every lot of California fruit destroyed or refused landing in a foreign country or other State acts as a check on our industry. The markets of Oceania and the Orient stand with open arms to our California deciduous fruits in particular. Then why are we not supplying them? Our fruit will not pass the quarantine requirements, for it is a fact that the grower who sends a shipment to Honolulu, Australia or New Zealand does not stand an even chance of landing it.

If you have traveled through the deciduous orchards, it must have pained you, as it has me, to see the almost criminal negligence used in the propagation and distribution of our deciduous products. Our friends in the citrus fruit industry have learned their lesson and stand foremost in the production of clean, sound products. In many places I have found the brush from pruning an orchard used as a fence barrier around the orchard, for filling ravines, or thrown in waste corners. The culls of the fruit are allowed to remain undisturbed on the ground, or are dumped in piles at the edges of the orchards. Sacks are carelessly left in the crotch of trees to provide winter quarters for the Codling Moth. In one such sack I found 82 chrysalids, and in the entire orchard only 18 more, and those under the bark of dead limbs that should have been removed, practically the next year's supply of Codling Moth were contained in these few acts of carelessness. After pruning the trees the brush is dragged across the orchard and dumped in some ravvine or waste place and is not destroyed, if at all until the following spring. Meanwhile the dragging has disseminated the pests such as scale, tent caterpillar, canker worm, tussock moth, etc., which may have been confined to a few trees, practically over the whole orchard. A few apple boxes, a bunch of shakes, a few shingles or boards left in close proximity to an orchard, particularly apple, forms an ideal retreat for many of our worst pests.

Do you own a small dryer or packing house, and did you ever stop to think what proportion of the Codling Moth you were affording winter protection in your house to infest your orchard the following spring? Over 90 per cent. Is there a grower here who does not believe it? Then go into your own orchard the last of February or March, and start on a hunt for moth larvae and chrysalids. If your orchard is well taken care of, no dead limbs or loose bark hanging over large sunburned areas, sacks in the crotches, old bands which you have not removed, you will be greatly surprised at the extremely small number you will find in half a day. I said your dryer contained 90 per cent but in most cases I belive it to be 99 per cent. Well, no, not the dryer alone but including the pile of fruit boxes in the shed or against the back of the dryer or barn; for in nearly every box you will find from one to fifty larvae or chrysalids. If you think your packing-house does not contain Codling Moth, just knock off a brace on your peeling table or a batten on the side of the building. I have found over one hundred under a single batten, three feet long an a window sill. I have taken 25 from a three foot tray in a packing house; around the bins where the apples are stored I have taken hundreds.

Gathering Prunes in San Joaquin County.

I think I am quite safe in saying we are controlling every pest, with the exception of the Codling Moth, in our California apple orchard today, where proper precautions are used. The pernicious scale, which once threatened the destruction of the industry, is practically a thing of the past. The other insects and diseases are now readily controlled by proper methods. But the Codling Moth gains each year, in spite of the deluge of noxious and poisonous sprays. What then are we to do? My contention is a change in the methods of combatting this persistent foe. Do not wait for the moth to storm our parapet of arsenate of lead or Paris Green, but carry the fight into his own country, rout him from his winter quarters. I speak more particularly of the Codling Moth for several reasons. Its destructive work is perhaps more widely disseminated than any other pest on account of the universality of apple and pear culture. Fruit growers are at present exercising greater care and are putting forth greater exertions to eliminate this pest than any other one insect. And on California in particular is centered the interest of all other apple growing states and countries on account of our present parasitic campaign against this insect. While I do not believe this cleaning up campaign would of itself exterminate the Codling Moth, at the same time, I believe it would greatly facilitate the work of the parasite.

The grape industry is another example of where careless methods resulted in great losses. The introduction of Phylloxera into many sections has unquestionably been by the shipping of boxes long distances from infested regions into unaffected vineyards. The mixing of boxes at the cellars has a tendency to quickly disseminate the pests throughout districts. It is conceded by all that the introduction from one country to another by means of rooted cuttings is, at the present day, inexcusable, yet I have seen growers replanting with diseased vinifera, areas destroyed by Phylloxera, and the cutting themselves have already been infected while still in the nursery. The rapid increase in a section is often or generally augmented by careless cultivation and failure to isolate the plague spots. I have even seen a vineyardist buy old stumps, pulled out on account of their condition due to Phylloxera and still maintaining living roots, haul them home for firewood, and dump them in close proximity to his vines. Cases of Phytoptus vitis, where the brush should have been destroyed on the spot and is instead dragged through unaffected portions, occur through being scattered and spread in this manner. I might go on almost indefinitely and give examples of this kind, of how spiders, mites, insects, fungi and bacteria are harbored and distributed by the loose methods which at present pervades the cultivation and distribution of many of our most important products; of the rapid and almost universal spread of the devastating pear blight; of the consternation caused by the increasing ravages of walnut blight; of the evident increase of grape diseases on the Pacific Coast; of the dissemination of the asparagus rust. But why call up unpleasant reminiscences. The thing that should command our interests and guide our exertions is how to stop this onward march of destruction by those forces. If the taxes we now pay were actually increased by the loss sustained by the insect pests alone, the storm or protestation that would assail those responsible would sweep away all opposition. But this inertia, manifested by the growers in removing this tax, which, by good authority, amounts to over $700,000,000 annually in the United States, alone, is quite inconceivable.

The laws of California are certainly comprehensive enough. They read, "infectious diseases, scale insects of any kind injurious to fruit trees, fruit, vines or other plants or vegetables. Russian thistles or other noxious weeds. Codling Moth or other insects that are destructive to trees." The State and County Commissioners are also vested with ample authority to deal with all cases. Then it must be up to the growers to set on foot the movement that is to sweep away all opposition. Opposition? Where does it come from? Must I say it? The grower himself.

It is quite common for men with orchards and living in orchard sections, to order by mail, express or freight, fruit trees, shrubs, plants, etc., from nurseries outside their county

(Continued on Page 71)

California Horticulturally

BY JOHN ISAAC, SACRAMENTO, CAL.

.WHAT AILS OUR WHEAT? .

What is the matter with California wheat? We are told that it lacks gluten, and a corps of scientific men are now engaged in the attempt to find or breed a new wheat which will produce gluten in our soil. And yet it is only within the past few years that we were informed of the shortage of this necessary element in our wheat. Years ago there was no complaint of this kind; California wheat was sent into the farthest markets of the world and was reputed the best wheat grown. It was used by eastern millers to mix with their home grown wheat to give the very quality in which it is now deficient. There was no complaint of a lack of gluten in it then. But we have cropped the same land to wheat year after year for the past forty or fifty years, and no one ever dreamed that it was necessary to restore to the soil some of the qualities which it was being deprived of. Crops of wheat have gradually grown smaller and the grain of poorer quality until today we get a very light harvest, when we get any, of poor, shriveled grain without gluten, and likely without other desirable qualities. Now we ask aid of the scientific men, who demand big appropriations for their work, and then set about inventing some new wheat that will have sufficient gluten to make it desirable. In view of the fact that we produced such large crops of superior wheat year after year while our soil was new, and that now under the same circumstances of soil climate and conditions, we cannot produce in any year a marketable wheat, it would seem to indicate that it is rather a case of soil exhaustion. We are in the condition of the spendthrift who has drawn aginst his bank account and made no deposits for years, and who suddenly awakes to find his drafts dishonored. We have been draining our fields of their fertile elements for years and now awaken to the fact that there is none left. It is to be devoutly hoped that our scientific friends will discover or produce the new glutinous what that we want, but in the meantime experiments might be caried on with a new seed, deep plowing, and fertilization.

STATUS OF COUNTY HORTICULTURAL ORDINANCES.

There have been so many inquiries as to the authority and power of county horticultural commissioners under the various county ordinances, that State Commissioner Cooper formulated a series of questions covering the most important matters and submitted them to the attorney-general. These questions and the replies have been published in the last circular from the office of the Horticultural Commissioner. Probably the most far reaching of these answers is that relating to the total prohibition of nursery stock from any section. Several counties in which the phylloxera and Anaheim disease do not exist have put an embargo on all grape vines from any section, for dread of these evils. How the attorney-general's opinion will affect these we cannot tell, but here is what he says in the matter.

Your fourth question is as follows: "If county boards of supervisors have authority to pass a horticultural quarantine law, can they pass a general ordinance declaring all nursery stock or grapevines brought into their county from any other part of the world a nuisance, without any inspection of the stock?"

"It is my opinion that ordinances so sweeping in their nature as you describe would be held by the courts to be unreasonable and void, as arbitrarily declaring that to be a nuisance which was not a nuisance. To make an occupation indispensable to the health and comfort of the civilized man, and the use of the property necessary to carry it on, a nuisance by a mere arbitrary declaration in a county ordinance and suppress it as such is simply to confiscate the property and deprive its owner of it without due process of law."

* * *

A HARD PROPOSITION.

The lot of the Commission appointed for the purpose of selecting a site for the new Agricultural College farm, is certainly not a happy one. There are so many opposing interests, so many locations which, in the estimation of their own people, possess the only requirements of the bill, that it is very difficult indeed to choose between them. One thing, however, upon which all seem to be united is that the farm shall not go to Berkeley, where it is believed there is an effort to put it. All the associations of farmers, dairymen, stockmen and fruit growers have passed strong resolutions against this, and should their wishes in the matter be disregarded, it might very seriously effect any legislation in favor of the University at the next session of the legislature, and render the commission unpopular with the class it represents. To meet all requirements, as much as possible, Prof. Wickson is now investigating the qualifications of the sections, and will make his report later to the whole commission. It does not follow that his report will be final, but it will have great influence. One of the most startling propositions in connection with the whole matter, however, is the offer by Mr. Theodore Kearney, of Fresno, of 320 acres of his property as a free gift to the state for the purpose of establishing the farm in Fresno. This tract is one of the most valuable in the state and is a very valuable donation, representing some $80,000. Of course, the donation of the land is not the only consideration, and it might be dear in the long run to accept something for nothing, but the offer is a very liberal one and all things being equal, should be accepted if possible. But whether accepted or not, Mr. Kearney still deserves credit for his liberal offer.

* * *

CLOVERDALE CITRUS FAIRS.

The people of Cloverdale intend this season to surpass all their former efforts in the matter of a citrus fair, and are already adding very largely to the pavilion in which these fairs have been held for the past thirteen years. Cloverdale grows some good oranges, not enough for shipment, but enough to make a good advertisement for Sonoma County. Really, these citrus fairs are very creditable. There is always a very large display of most excellent fruit, and if atended, one would really believe that Cloverdale was the center of a great citrus section, while the truth is that it takes about all that is grown to make up the fair. Still they show a spirit of enterprise that is truly commendable and have done much toward drawing attention to this portion of the State. Perhaps the people around here could grow more citrus fruit if they tried, but in answer to a question put to one of the leading citizens of Cloverdale as to why, when they grew such good fruit as they exhibited, they did not grow more, he replied: "Do you think, when we can get $300 per acre from our grapes and get returns in three years, we are going to bother with oranges and wait ten years for a crop which would pay no better?" That may be why.

DON'T TAKE A CHANCE

ARMOUR'S BLOOD BONE AND SINEW FERTILIZERS

with *cheap* fertilizers. Remember the analysis doesn't tell the whole story. Cheap materials, coarsely ground, careless mixing, poor mechanical condition show up in the orchard after your money and time are gone.

Get Behind the Shield

of fertilizer protection offered you in the **ARMOUR** trade-mark and buy the highest-grade animal products at first hand.

THE ARMOUR FERTILIZER WORKS
736 Hellman Building, Los Angeles—Factory, Colton, Cal.

Mulberry Trees

Six varieties for Silk Producing and Fruit Berries. Special attention is called to the Morus Nigra, a Persian variety especially for fruit. Also to the Japanese Mulberry, a variety generally used for silk culture.

I am also prepared this year to furnish 10,000 Rooted Grape Vines, following varieties: Flaming Tokay, Black Malvoise, Black Prince, Cornichon, Sable Kanski and Muscat. I have also some very fine Orange Quince Trees and Pomegranates. Send for descriptive circular free by mail.

R. P. LAWSON, 252 No. Avenue 21, Los Angeles, Cal.

Armstrong Nurseries

QUALITY

The Sign of Quality

Is in evidence in all the nursery stock graphically described in our new catalog, which tells of the best varieties of Fruit Trees, Grape Vines, Field-Grown Roses, Shrubs and Plants. Avoid the middleman and dealer; buy direct from the producer. A copy of this booklet will be sent to you for a two-cent stamp.

Armstrong Nurseries, Box 14, Ontario, Cal

THE CROCKER BARTLETT PEAR
Is out of sight compared with other pears.
GOLDEN RULE NURSERY - LOOMIS, CAL.

APPLE TREES APPLE TREES

The largest stock of home grown Apple Trees in So. California. W. W. Pearmain, Yellow Newton Pippin, Arkansas Beauty, Yellow Bellefleur, our specialties. Grafted and Seedling Santa Barbara Soft Shell Walnut Trees, and other Deciduous and Ornamental Stock.

Home Phone 644 Eureka Nursery Co., Downey, Cal.

THE VERNON NURSERY
4524 Central Avenue, Los Angeles, Ca.
Deciduous Fruit Trees, Grapes, Walnuts, Figs. Peaches, Apricots, Plums, etc.
Phone: South 1105 A. YARNELL, Prop.

TREES!

80,000 Apple Trees in 42 Varieties. Extra well rooted. Clean. Grafted on whole roots and free from all pests. Also an extra fine stock of Prunes, Pears, Plums and Walnuts. Write for price list. ***A. F. Scheidecker,*** Proprietor Pleasant View Nursery. ***Sebastopol Cal.***

GEO. B. WARNER'S
Orange County Nurseries

Choice line of Orange Trees, consisting of Valencia Late, Wash. Navel, Navelencia, King Tangerine. Eureka Lemon, Budded Loquat, Blue Gums, Red and Sugar Gums, large stock Soft Shell Walnut trees 3 years old, Grafted Walnuts, Palms, Shrubbery, and general line of deciduous fruit trees. Write for price list.

Est. 1889. SANTA ANA, CAL.

When writing advertisers mention Cultivator.

A Carload of the Finest

Deciduous Trees ever brought to Los Angeles. Direct from the Oregon Nursery Co. It is really beautiful stock. Call and see it. Citrus Trees of all kinds. Ornamentals, Palms, etc.

STEWART BROTHERS NURSERY
The Oldest and Best Established Nursery in So. Cal. 712 So. Spring St., Los Angeles, Cal.

WALNUT TREES
From carefully hand-selected seed. Postal gets prices.
A. A. Mills - - Anaheim, Cal.

Jurupa Nurseries
Riverside, Cal.

APPLES—Finest you ever saw.
GRAPES—Good assortment absolutely free from disease.
WALNUTS—Choice stock.
WASHINGTONIA ROBUSTA PALMS—Lots of them.
Wholesale and retail. Complete line of trees and plants. Write for price list.

DRIED GROUND TANKAGE
THE BEST AND MOST ECONOMICAL FERTILIZER

ANALYSIS { 10½ per cent Ammonia
18 per cent Bone Phosphate

WRITE US FOR PRICES AND PARTICULARS

Western Meat Company - - San Francisco

Practical Farm Science

GREEN MANURING.

Green manuring is the process of plowing under green crops for the purpose of adding organic matter to the soil with its accompanying mineral matters to increase the soil fertility. This process is usually applied upon loose soils that are deficient in humus, in order to increase this material in the soil, and thereby securing its beneficial effects upon the power of the soil to retain moisture, to acquire gases from the air, and to hold other manures that may be applied to the soil.

On heavy soils the large amount of green matter plowed under tends to divide and lighten the soil by its mechanical effects, and in its fermentation or decay induces chemical reactions in the soil that decomposes the minerals of the soil. These effects added to other well-known effects of humus in the soil, have led to the very extensive practice of green manuring of late years and its advocates double in number each year. There is no State in the Union where green manuring should be more extensively practiced than in California, and our farmers are rapidly awakening to its importance.

GREAT AID TO AGRICULTURE.

A Canadian agricultural society is said to be doing valuable work by giving prizes for the best kept farms. It is suggested that if this scheme were adopted in place of exhibitions in some localities it would be a great aid to agriculture. It is also suggested that some of the money spent in fairs might be used by agricultural societies in the purchase of pure bred animals, for grading up native stock. Anything that aids a farmer to feel greater pride in his surroundings, whether the condition of his farm or the quality of his stock, is legitimate work for an agricultural society. A competition for the best farm might have a wonderful effect in the improvement of a rural neighborhood.

THE OLIVE TREE.

The tree is slow in reaching maturity, but after the fifteenth or sixteenth year it bears on indefinitely and seems never to lose its vitality. There are trees in the garden of Gethsemane estimated to be over a thousand years old, still in full sap and vigor. It is of all fruit trees the hardiest, for scarcely any amount of mutilation, any severity of frost, or even sharp scorching by fire, sufficies to destroy its life. "So long as there is a fragment remaining, though externally the tree looks as dry as a post, yet does it continue to bear its load of oily berries, and for twenty generations the owner gathers fruit from the faithful old patriarch. This tree also requires but little labor or care of any kind, and if long neglected, will revive again when the ground is dug or ploughed, and yield as before. Vineyards forsaken die out almost immediately, and mulberry orchards neglected run rapidly to ruin; but not so the olive. Though they may not have been attended to for half a century, yet they continue to be a source of income to their owners."

It is unwise to use a spavined mare for breeding purposes.

THE RUSSIAN THISTLE.

The Russian thistle or Russian cactus (Salsola kali var. tragus) is really neither a thistle nor a cactus. Saltwort is its true English name, but to the farmers, who are best acquainted with the plant, it is known as the Russian thistle.

The weed is an annual, growing to a height of 6 inches to 3 feet, branching profusely, and when not crowded forming a dense, bush-like plant 2 to 6 feet in diameter and one-half to two-thirds as high. When young, it is tender and juicy throughout, with small, narrow, downy, green leaves; but in late summer it sends out hard, stiff branches which bear, in place of leaves, sharp spines, one-fourth to one-half inch long. At the base of each cluster of spines is a papery flower about one-eighth inch in diameter.

WHAT A FARMER SHOULD KNOW.

Here are a few of the things which a thoroughly successful farmer must know:

1. Botany enough to enable him to understand the nature of his crops and how they grow.
2. Geology enough to know the different kinds of soil and their properties.
3. Entomology enough to know which insects are pests and which are friends.
4. Ornithology enough to know which of the birds are injurious and which are helpful.
5. Forestry enough to know how properly to preserve, extend and harvest his woodlands.
6. Horticulture enough to know how to manage his fruit and vegetable gardens.
7. Veterinary science enough to understand his horses and cattle and their ailments.

He must have ability and push enough to enable him to apply his knowledge of all these things in actual practice. In addition he must be a carpenter at times, he must know how to mend harness, file saws, sharpen axes, and care for machinery. He must possess public spirit and manliness enough to make him a valuable member of his community, common sense enough and business methods enough to enable him to guide wisely all the ends of a very complicated business. Yet some people who do not know any better, think any ignoramus can be a farmer. It takes a man to be a good farmer.

NITROGEN CULTURES FOR THE TREATMENT OF ALFALFA SEED.

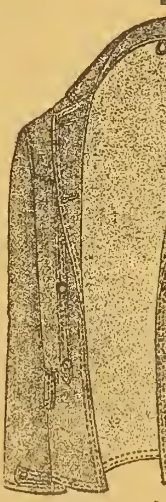
A number of inquiries regarding nitrogen cultures for the treatment of alfalfa seed have reached this office. A renewed interest in the subject of the inoculation of alfalfa seed with nitrogen-fixing bacteria has been manifested since the discovery by the United States Department of Agriculture of a method whereby the nitrogen cultures may be prepared in such form as to be sent out by mail. formerly soil from fields known to contain the bacteria was transported and spread on the fields to be treated. This method was laborious and expensive.

It may be in place just here to briefly discuss the action of this bacteria. Nitrogen-fixing bacteria must not be confused with nitrifying and de-nitrifying germs. The nitrifying germs attack humus or other vegetable matter in the soil and liberate nitrogen in a form which can be used by growing plants. This class of germs of which we write act very differently. They are able to assimilate and use for building up their own bodies the free nitrogen of the air. The plants grown on the farm can not use the free nitrogen of the air, although about four-fifths of the air is nitrogen. Some farm crops can, however, obtain this free nitrogen from the air with the assistance of a certain kind of bacteria. These bacteria live and multiply in the tissues of the plant roots, thus forming little knots or enlargements on the roots from the size of a pin head to that of a pea or larger. In return for the shelter afforded by the plant roots the bacteria provide nitrogen for the plant, and this nitrogen is not obtained from decaying vegetable matter but is taken directly from the abundant and cheap store found in the atmosphere. This kind of bacteria can live only in the roots of the class of plants known as legumes, such as alfalfa, red clover, vetch, peas, beans, etc.

Any farmer can secure nitrogen cultures, in the order of receipt of requests, by writing to (Director) A. C. True, Office of Experiment Stations, U. S. Department of Agriculture, Washington, D. C., stating the number of pounds of seed to be treated, the kind of seed to be treated and the date when the seed will be sown.

Fortune—"What's the matter, dear? You look excited."

Mrs. Fortune—"Excited! Why shouldn't I? The new chambermaid complained of a headache, so I sent her up stairs, and told her to take things easy. She did. She's gone off with all my jewelry.—Judge.



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Copy of Analysis of competitive brand labelled and sold as "Powdered 98% Caustic Soda: Sodium Hydrate, 75.60%; Sodium Oxid, 58.59%. Signed: I. M. Curtis & Son, Analytical Chemists.
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The first matter of importance when spraying is to secure clean fruit and healthy trees; the next thing is to have expended the least possible amount of time and money.
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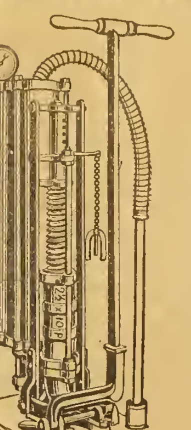

are peculiarly adapted to do these things. They are entirely different from other pumps in almost every respect, but particularly because they
Save One-third The Labor
In the Spring rests the secret. What's the use in working so hard when the same results can be accomplished with a third less labor? Save time and effort by dividing the work, doing half at each stroke of the handle instead of doing all at one stroke, and meanwhile be working against only **one-half** the pressure indicated on the gauge. **Magic** pumps are built in two sizes and have non-clogging ball valves. It is worth your while to see one in operation.
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and by our system of growing different varieties in our separate nurseries we are able to grow them all ***true to name.***

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Apples, Pears,
Plums, Prunes,
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Oranges, Lemons,
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Grafted on their own roots. All the leading table, wine and raisin sorts.

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Deciduous Fruit Culture

SOUR SAP IN FRUIT TREES.

Sour sap may be brought about in various ways, but the immediate cause is the action of ferment in the sap. All ferments of this class are caused by some form or organism known as bacteria which gains access to the circulation, causing unhealthy conditions. The most frequent cause of this condition, is wet feet. If a tree has not good drainage, the circulation of the sap becomes deranged and the result is sour sap. A tree may stand in an excessively wet place for a long time during the cold winter months when it is dormant, and not be injured, but it will succumb in a much shorter time if this condition obtains during the warm spring time when the sap should begin to move rapidly. Trees with sour sap are readily recognized by offensive sweet odor they emit during the first stage or when the sap is just turning. The trees will make a faint struggle to send out blossoms and leaves sometimes, but if the ordor is present, it is too late to apply a remedy. Its doom is already sealed. The remedy should lie in a preventive at the time of planting.

Land that is liable to become wet and has not perfect drainage at all times, should never be planted to fruit grafted on peach root. Plant nursery stock grown on Myrobalan root, and if the land is liable to be excessively wet, do not plant peach trees at all. Plums on the stock mentioned, or pears should be planted there.

Gumming of the trees is sometimes confused with sour sap, but it is entirely different and the cause is not well understood. The remedy is however, simple, and in most cases is effective. When the bark of the tree looks dark and spots of gum or moist appearing places show, it is a sign that the circulation is not right, and in such cases, the trunk and main branches should be slitted with a sharp knife on at least three sides. This admits of the escape of the sap and gum which would otherwise force its way around under the bark of the trunk or branches and thereby girdle them. When treated this way, the heavy bark will at once expand and new and healthy bark will form in the lines of incision.

GRAFTING RESISTANT GRAPES.

Grape grafting is most successfully done late in the spring. When the first buds open on the vines, saw them off an inch below the ground, split with a chisel and insert a wedge-shaped scion with two buds on it. Cut your scions so that the lower bud comes on the outside and even with the top of the stump. Do not use any cloth or wax, but mound up with earth so as to cover all the scions at least an inch above their tops.

The scions should be kept in a cool place that is not too damp. When they are inserted in the stump in the spring, they should be in good condition, but not sappy. If they are a little drier than the stump, they will commence to take sap from it immediately. You had better put two scions in each stump and let both grow all summer if they will, in case your stumps are over an inch in diameter, and at the next pruning time cut one off. As the young tops gain strength, the dirt can be hoed away from the bases. As soon as they grow to be 10 inches or a foot high, they should be tied to the stakes or the wind will blow a great many out, or bind them so that it will be impossible to break out the graft. If any should get down unobserved, do not try to straighten them up at pruning time without first digging away around the roots so that stump and all can be pulled over so as to make the top straight. It is better to have a crooked stump under the ground than a crooked top or no top at all. At one year from grafting, the point of union is not strong and it does not take much of a strain to break them off there.

THE ANAHEIM DISEASE.

The Anaheim disease (which did not originate at Anaheim) is readily distinguished in several ways and should never be mistaken for mildew or vice versa, as is frequently the case.

The chief distinguishing feature is that the change in color of the leaf in the case of the disease takes place in the tissue between the midrib while in case of mildew, the discoloring shows up on the midrib, while the tissue between remains healthy.

Different varieties of grapes are differently affected, those bearing light fruit always having a light discoloration of the leaves, the tissues between the midribs turning light yellow at first and finally dying around the edges and center of the spaces and turning brown. The leaves nearest the base of the canes are soonest affected and die and drop first. The leaves do not drop from the vine in the usual way, the stems staying on the canes for some time after the body of the leaves have dropped. This applies to different varieties of grapes.

SPRAYING FOR THE PEACH MOTH.

The peach moth (Anarsia lineatella) has proven a very serious pest to many peach and apricot growers in the northern orchards. This pest passes the winter usually in the crotches of the young twigs in a dormant state, becoming active as the sap begins to flow. With its renewed life it starts for the surface and should be checked before it escapes. To this end the salt, sulphur and lime spray is recommended, and this should be applied as late in the season as possible, so as not to affect the new growth. By spraying late the worm can be caught when near the surface, the wash penetrating into their shallow burrows and killing them. If the spraying is done early in the season, however, the young worm is covered beneath such a mass of debris and excrement that the wash will not penetrate to it, and for this reason late spraying is recommended.

QUALITY IN STRAWBERRIES.

Quality counts in strawberry production quite as much as in other lines, sometimes vastly more. We came across an instance illustrating this in an exchange recently. The narrator resides at Reading, Mass., a well known center of strawberry production, where the growers take pride in putting only the best on the market. He writes: "When ordinary berries have been selling in Boston as low as ten cents a box, some of the Reading berries have been sold as high as twenty-five and thirty-five cents a box, consequently it has paid the farmers here to devote as much time as they can in developing the strawberry to a degree of perfection, going into the largest markets and practically selling at their own price." That's worth thinking over.—The Strawberry.

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To grow oranges—fine ones that bring big money—you must have Good Trees, Good Soil, Right Climatic Conditions, and a hundred and one other things.

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With the Citrus Growers

BY C. A. DAY, PASADENA, CAL.

HARVESTING THE ORANGE

In the reports of the condition of oranges delivered in the Eastern markets for the fore part of the month of January, we find in many instances the following: "Fruit pale, spotted, scarred and small sizes." Fruit of this character does not sell well and if shipped on order is frequently rejected and is diverted to the auction markets often to be sold for only enough to pay the expense of harvesting and shipping. In order to market the navel crop of oranges it is necessary to begin shipment with holiday fruit. These holiday shipments usually close about the 10th of December, the main shipment beginning with the new year. This year, with the good prices for holiday fruit the early coloring of the oranges, the shipments continued through the month of December. The continued forwarding to market of pale colored and sour fruit has had a depressing effect upon the markets and has not added to the reputation of California navel oranges. There is an Eastern demand at this time of the year for well colored sizable fruit and this demand should be supplied.

The fault lies with the growers and shippers who insist on forwarding immature fruit. In picking oranges at this time of the year care should be taken to select as to color and size.

In the matter of size, none smaller than 216's should be picked. One reason for this is that there is but little or no demand for smaller sized fruit in early winter. Another reason is that the smaller sized fruit, if left on the tree until later in the season will grow in size, giving more fruit and of desirable sizes. As the orange crop for this year runs to small sizes it will more than supply the demand for such sizes. Last year we had an over-abundance of large sizes, which were discounted. It will certainly be wisdom on the part of the growers to hold the small oranges on the trees and get the increase in size. As to color, the market demands well colored fruit and the deep orange-colored fruit only should be picked. Pale colored fruit shows one of two things, artificially colored fruit that is particularly green and colored by the sweeting process, or immature fruit picked from the tree before it has the required color. To secure the class of oranges we require it will be necessary to carefully go over the trees from time to time selecting the matured fruit with regard to color and size. It is probable the going over the trees once a month is the ideal method. This method of harvesting will relieve the heavily loaded trees and give the smaller sized fruit an opportunity to grow into desirable sizes. By this method the grower will be furnishing the quality and size of fruit which the market demands. Such fruit carefully picked, cleaned, graded, packed and delivered sound will sell to the best possible advantage. It will cost more to pick oranges by selecting only those fit for market in this way, than to turn in to the orchard a gang of careless pickers, with the result that half ripe and small-sized oranges will be picked. The carefully selected fruit will sell for more than enough to pay for the extra expense or selection.

From what I can learn more care is being exercised in picking oranges than formerly. This is probably due to the excessive decay of last year and to Mr. Powell's investigations. There are the two extremes of too long stems and a close cut with injury to the orange. With careful work in picking the percentage of decay will be materially decreased. There is but little puffing this year and what little there is may be charged to faulty culture. If there are any frozen oranges in California, past experience will teach the growers the futility of shipping such fruit as it is easily detected on account of its light weight.

If reports are true the present crop of navels is of good quality and less in quantity that that of last year and with the repeated short supply of other fruit in market the prospects for top prices are good. So far as I have observed there is a full set of seedling oranges but the size at the present time are small, but with favorable climatic conditions they may size up.

There is a good set of Valencias but in the Pasadena section they are small in size and for some reason unknown to the writer are coloring up.

We see instances of half grown fruit that is turning yellow.

INSPECTORS' REPORTS.

Several counties in this State have monthly meetings of horticultural commissions whereat the several inspectors are required to read their monthly reports, each report being discussed by those present, all interested visitors included.

A representative of the Cultivator recently attended such a meeting in the rooms of the Los Angeles commission, six inspectors reporting as follows: Frederick Maskew, Long Beach; C. A. Day, Pasadena; C. L. Northcraft, Pomona; C. B. Blain, Sierra Madre; Wm. Wood, Whittier; and C. E. Bemis, Covina. Among interesting facts elicited were; Wooly aphis may be carried to distant orchards in irrigating ditches; in fumigation more water and longer exposure (1 hour to all night) is necessary to effectually combat our most serious citrus fruit pests; deciduous fruit trees are being shipped in from Colorado, Utah, and points farther East: Sierra Madre orchardists can make more money by uprooting their lemon trees and growing winter vegetables; the late frosts have done some damage to citrus orchards and played havoc generally with nearly all vegetables, strawberries, etc.; that the Whittier pathological station expert has succeeded in making dry cultures of the bacterial walnut disease, thereby proving it may spread very easily; and a host of other valuable points pertaining to horticulture. The educative value of these meetings can not be over-estimated.

SAN BERNARDINO COUNTY HORTICULTURAL COMMISSION

The report of the financial operations of the San Bernardino county Horticultural Commission for the year 1905 has been completed by Commissioner S. A. Pease.

It shows that the total cost of the commission, which includes the work both of commissioners and inspectors, was $9,309.14. This is what it cost the tax payers of the county. The operations of the commission covered a much greater scone, a total of $41,360.99 having passed through its hands. This is occasioned by the fact that while the county furnishes the machinery for fumigation as well as all expenses of inspection and incidental duties, the cost of fumigating itself is paid by the owner of the orchard benefitted, and this in turn paid back into the treasury constituting a sort of revolving fund.

The plant for carrying on the war against scale pests was increased during the year by the purchase of $4,220.61 worth of apparatus, including two power sprayers and 99 tents, which are in good condition and are therefore an asset. With the cost of these included in the outlay, it amounted to $13,529.75.

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Valencia Late
And all leading varieties of orange and lemon trees, and Marsh's seedless grapefruit. Trees one and two years old. Extra fine and thrifty and no scale. Plenty of fibre roots.
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15,000 Fine Trees three years from seed next spring. No clubs—fine fibrous roots; just the tree to take hold of a new home.
Valencia, Na-Valencia, Improved Navel, Washington Navel Oranges and Nectar Pomelo.
Not touched by the frost.
A. P. Griffith, Azusa, Cal.

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CITRUS TREES
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The Ornamental Garden

BY ERNEST BRAUNTON, LOS ANGELES, CAL.

SAVE OUR TREES.

The story, credited probably to Ruskin, is not new, of the tree in the forest and the manner in which it appeals to different natures or to people of different environment. There is the capitalist who looks at it and says, "trees are getting scarce; that is a fine specimen. Lumber is worth more each day and I must cut as soon as it reaches maturity. I will figure how much it is worth." The lumberman looks it over critically and says to himself, "it will make so many cuts and so many boards and so much waste." The botanist "discovers" it some day and tells its name, its family and its genalogy. The artist sees it, and its branches are a joy to his soul. The light glints on its leaves, the strength of its mighty form appeals to his genius—and he charms tired humanity with a bit of old mother-nature transferred to canvas. Then on a day, comes the poet. He sees the big tree, so calm and so restful, standing with its brothers in the forest. He lies down under his shade and looks at the blue sky through the windows in his roof. He thrills to the song of the birds who live there and he imbibes inspiration from the monarch of the ages, whose life is so like unto the life of man. He is able afterward to sing a song which endures in the hearts of men and on the printed pages, for the space of time that humanity is alive.

Part of the standpoint of each of these men is the result of education, and only a part, for in each man there is some degree of the qualities of all. A child is an incipient poet or artist or plodder. He has potentialities and he has a right to be developed along the lines of least resistance. Nothing is so useful in development as knowledge. Trees and plants are like people, they show us much finer natures, if we are acquainted with them, than we ever dreamed they possessed. A child has all possibilities and a hint in the proper direction may make or mar his character and his work for life. Why then should we, of all people, not extend to the litle ones in our midst all the benefits of the refining and bettering of humanity which lies in the friendship of trees and plants? Introduce the child to the tree and the rest will come. If the tree and the bird are the personal friends of the child, when he is a child, it is likely he will not forget that friendship when he is a man, and the life of all nature will be more sacred to him. He will not wantonly destroy a tree and he will know the value of a little piece of earth and a few plants to his home and his family. The big trees of California forests, which constitute great value and the principal beauty in this State and which cannot be duplicated on this or any other continent, are in constant danger of annihilation by commercial-spirited individuals. Therewith appeals to all who love nature's beauties and to all fair minded citizens to organize and to take vigorous, united action for the preservation of our forests.

More than a dozen inquiries have come to us during the past few days regarding base of supply for tropical fruit trees, the hedge plant (Atriplex Breweri) etc. We advise those desirous of obtaining these plants to write to our advertisers of ornamental stock.

AGRICULTURE IN OUR SCHOOLS.

The city is a magnet that draws the population from the country. Fewer farmers are needed from decade to decade because each farm worker can produce proportionately more than formerly. The enlarged percentage of population in the city and the lessened proportion of people on the farm is a result of economic and industrial changes, not of mere sentiment, as some philanthropists assume. It is far easier for rural people to become city people than for city children to be educated to live and work in the country. The city needs a constant supply of strong people from the country, and God pity the day when the city can no longer bring in virile blood from the country.

We must take the situation as we find it. We do not want too many people in the country, because that would mean an over-production of rural products. We want only so many people in the country as will get sufficient renumeration for their work, so that the children may have the means for at least a high school education. Our city high schools lead from the farm; our agricultural high school educates a goodly number for the farm, and its capacity should be rapidly multiplied, because it makes a class of people who are really trained in the science and art of farming and farm home making. But, how are we going to get hold of the hundreds of thousands who do not pass beyond the country schools?How are we to teach the great mass of the country youth better farming and better home making? We must first modify the education of the teachers of the rural schools. If we could have one generation of rural school teachers, who, without lessening the effort for good instruction in the common branches, could teach of the farm and the farm home, the next generation of farm boys and girls would be better prepared to become teachers of the generation following them. Through our agricultural school, through our summer teachers' institutes and through other agencies, we must train a class of rural school teachers.

BEAUTIFY YOUR FARM.

While we are all doing our little bit in the city for the improvement and beauty of the town of our choice, our country brethren should not lose sight of the fact that a little energy and care along the same lines will bring forth abundant fruit, say a writer in The Ranch.

Well kept lawns, clean streets, and alleys, vacant lots kept well cleared of weeds—these things are all part of the work of keeping a city clean, healthful and pretty. They attract residents and draw capitalists. But while all these things are being cared for in the town, why should our country neighbors neglect them utterly? There is such a thing as "the farm beautiful" and the results are as correspondingly valuable and satisfactory as is the work of making "the city beautiful."

A drive through the adjacent farms shows well kept orchards; the fields show an abundant harvest; the cattle are sleek and well fed—but the surroundings of the farm house, in too many cases, are almost everything that they should not be. The lawn—if there is any—is ill kept; the steps are worn out; perhaps there are pickets broken and gone from the front fence; weeds have grown up along the roadside so as to almost shut off a view of the premises— the whole farm shows that there is no effort made to make it look attractive or more beautiful than the many places around it which are no better than it is.

Beauty will add to the value of any farm. It is an added asset which costs the smallest amount of money. Those who would make the country more attractive and add dollars to the value of their properties should pay more attention to these things.

SWEET PEAS AND BEES.

An interesting point in natural science is being discussed with regard to sweet peas. It is said that stocks of some varieties have shown an unusually large proportion of "rogues" this season, which is attributed to the prevalence of a humble bee, which in visiting the flowers pulls down the keel by its weight and exposes the pistil, thus effecting cross fertilization. Growers with a turn for natural science may be glad to have their attention turned to an interesting subject for investigation; others may perhaps welcome a good excuse in case they are troubled with complaints as to mixed stocks.

This cane sugar, more or less converted by the bees into invert sugar, is laid down in the comb; but according to the definition given above is not, strictly speaking, true honey—Prof. A. W. Ogden.

TAMARIX GALLICA.

This popular plant which is known by the common name of "Tamarisk" is suited to all soils and conditions. It will grow in water or the driest soil, as well as in salty ground and seems to thrive everywhere. In several countries it is used for binding shifting sand. Locally the fine, large sprays of pink blossoms are much in demand by the florists for decorating purposes.

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6 HARDY EVERBLOOMING ROSES On their own roots. ALL WILL BLOOM THIS SUMMER. 25c
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In the Vegetable Garden

GREAT VALUE OF VEGETABLES.

There is not a single garden vegetable that has not a medicinal quality aside from its food value. The first thing to come in the spring is asparagus, valuable in all kidney complaints and a most delicious dish. Then we have rhubarb, which counteracts the effect of the usual heavy meat diet of winter and clears the system of some of the acids that produce dyspepsia, rheumatism and other painful maladies. Radishes are good for stomach troubles, dandelion greens make a good blood purifier, horse radish is a tonic and makes the appetite good. Onions cure colds and bring sweet sleep, and celery and lettuce soothe the irritated nerves. Carrots are good for scrofulous tendencies, cucumbers are wholesome and cooling, notwithstanding the bad reputation they have, and parsley is known as a palliative in cases of dropsy. The whole list of vegetables might be named and a positive medicinal value given to each of them. A well-filled garden, the products of which are used regularly in the family, furnishes a variety of medicinal agents which meet the requirements of a large number of people and fortify them against the germs of diseases, giving them immunity from attacks that would prostrate them if they were not defended by the use of a rational diet.

THE TREE TOMATO.

Everyone who has grown the tree tomato (Cyphomandra betacea), where the climate is sufficiently mild to allow of its perfect development, is loud in its praises. Only in our most favored spots is it free from the effects of frosts; but in such localities every one should have at least one tree of it. In less favored countries it is grown for its fruit in specially constructed glass houses, and proves a profitable investment.

When well grown the tree is literally weighted down with a crop of medium-sized, pear-shaped tomatoes of a redish orange color, rich in taste and firmer in flesh than the ordinary tomato, and for the latter reason is a much better keeper and would easily ship long distances. Many prefer the fruit to that of the herbaceous tomato vine.

.FERTILIZER FOR POTATOES..

Experiments with commercial fertilizers show that for potatoes, potash is the most important element and sulphate and muriate of potash were generally more satisfactory than kanit. The results also indicated that where commercial fertilizers alone are used a complete application, consisting of 1 1-8 cwt. of nitrate of soda, 7-8 cwt. of sulphate of ammonia, 3 cwt. of superphosphate. and 1 cwt. of muriate of potash per acre, furnishing 40 pounds each of nitrogen and phosphoric acid and 60 pounds of potash, is to be recommended. Barnyard manure gave better results this season than commercial fertilizers. The combined use of barnyard manure and commercial fertilizers is considered profitable for potatoes, and an application of 12 tons of barnyard manure, 1 1-8 cwt. of nitrate of soda, 7-8 cwt. of sulphate of ammonia, 3 cwt. of superphosphate, and 1 cwt. of muriate of potash is suggested for use.

THE CHAYOTE.

It is stated that within the past two or three years this vegetable has become recognized by the general public in Queensland, Australia, as an excellent table vegetable. It thrives remarkably well and is noted as one of the most prolific bearers among the Curcurbitaceae. It is grown in large quantities also for feeding dairy cattle, pigs, and horses. Four hundred fruits have been gathered from a single vine in one season. No disease of any kind has been known to attack the plant in Queensland as yet. It is prepared by cutting the fruit in half, boiling it, and serving with pepper, salt and melted butter.

CULTIVATION OF MUSHROOMS.

The author in a government bulletin, (B. M. Duggar) advocates the tissue method of spawn culture which is described essentially as follows: Test tubes or large mouth bottles are filled with fresh stable manure or with a compost and then sterilized. This material is then inoculated by selecting from a bed of vigorous growing mushrooms a variety which proved unusually prolific. With a sterilized scalpel and forceps, the stem is broken off and the outer skin peeled off. Small bits of the tissue of the mushroom are then taken and used to inoculate the manure in the sterilized bottles.

It has been found that within the course of a week, or sometimes within two days, these bits of tissue will send out a small growth of mycelium which spreads to all parts of the tube or bottle within three or four weeks. This material can then be used as pure culture virgin spawn for inoculating bricks. This method of producing spawn has been found to be commercially practicable, and three varieties of mushrooms named, respectively, Alaska (a white sort), Bohemia (a brown sort), and Columbia (an intermediate or cream-gray sort), have been developed which can be produced true to type.

DEGENERATION OF POTATOES.

A late German bulletin discusses at some length the degeneration of potato varieties as possibly due to continued propagation by means of the tubers, to unfavorable local conditions, and to poor selection of seed tubers. The literature on this subject as well as experiments along this line are reviewed.

The author concludes that in all probability the age of a potato variety is not a factor in its degeneration, but that unsuitable environment, especially a poorly adapted soil and insufficient care in the selection of seed tubers, are strong factors in reducing the vigor of a variety.

* * *

In another bulletin the conclusions drawn are based on the results of numerous experiments by different investigators.

The degeneration of varieties is considered as largely due to cultural and local conditions, while the superiority of new varieties over older sorts is regarded as indicating a greater adaptability to the particular region. Physiological degeneration of a variety is not believed to result from the asexual method of propagation through a series of years.

The fact that certain old varieties in particular localities retain their productiveness, in the opinion of the author would seem to contradict such a conclusion. It is stated that a study of the principal factors of growth, especially climatic conditions in each locality, would throw much needed light upon this subject.

PRUNING TOMATOES.

W. T. Macoun, in Country Gentleman, gives an account of results obtained from pruning tomato plants.

Two varieties of tomatoes were used in the experiment, Sparks Earliana and Matchless.

When the plants had developed 6 strong leaves in the hotbed the tops were nipped off and the plants given more room, being spaced 5.5 inches apart each way. "The object of pinching off the top of the plant was to cause new shoots to develop at the axils of the leaves, in order to have 6 branches bearing early tomatoes instead of one cluster usually found on the top of the plant." These plants were set out in the field June 6th alongside of other plants which were left unpruned. On June 22nd one-half of the pruned plants were pruned again, all laterals being taken out and the 6 main branches only being left. The remaining plants were left to grow at will.

The first ripe fruit on the unpruned plants was secured July 29th, on the plants pruned once August 13th, and on those pruned twice August 12. The heaviest yield of fruit was obtained from the plants pruned twice in the case of Sparks Earliana and pruned once in the case of Matchless. In both cases the pruned plants gave heavier yields than the unpruned plants. The results are thought to be very promising and market gardeners are advised to give this system of pruning a trial.

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Brandywine Strawberries (Kellogg strain), Gray's Gardena Dewberries. First-class plants at low prices.
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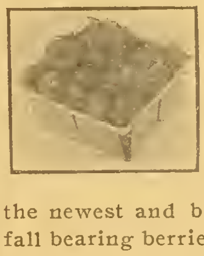

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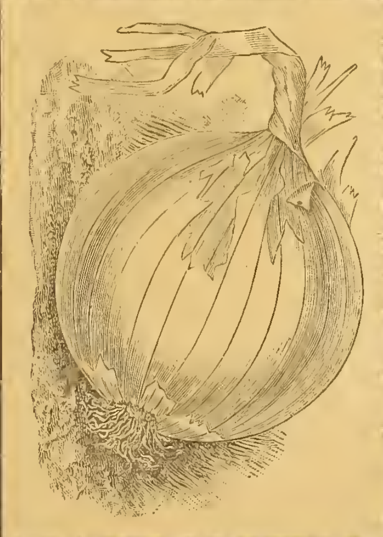

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FARMERS' INSTITUTES.

The following institutes will be held in Los Angeles County at the dates named:

Toluca, January 18th, Burbank, 22d, San Fernando, 24th, Alhambra, 25th, Gardena, 26th.

Prof. W. T. Clarke of the University of California will be present at all these institutes.

Beet Contracts for 1906—The contracts of the beet sugar companies for this year appear to have about all been closed in California, judging from reports received by the newspapers. The schedule of prices as agreed upon indicates an increase to farmers over the prices paid during the past season. The minimum price will be $3.50 per ton, which will be paid for 11 per cent. beets. For each additional percentage of sugar above 11 per cent. there will be paid 25 cents per ton additional up to and including 15 per cent., making 15 per cent. beets pay $4.50 per ton. Above 15 per cent. for each additional per cent. of sugar 30 cents per ton will be paid. On this schedule 16 per cent. beets will pay $4.80 per ton; 17 per cent., $5.10; 18 per cent., $5.40; 19 per cent., $5.70, etc. It is estimated on the percentage of the past years that this will be an average increase of 35 cents a ton on all beets raised for this factory. It will be noticed that this puts a premium especially on beets of high quality, although it makes a minimum of 11 per cent. instead of 10 as heretofore. These contracts, if they are correctly reported, ought to result in increasing the acreage of beets.

It has been noticed that farmers have been giving more attention to the subject of beet culture of late, prompted thereby by the disposition shown by the sugar factories to pay better prices. There are sections in California where too much alkali does not appear, where beets will bring a better return than any other crop. Farmers will do well to consider these conditions carefully for the sugar beet demand is growing.

* * *

Knockers at Work—The cold wave which passed over California, recently, has given the unscrupulous fruit buyers their golden opportunity to go before the growers and represent, as they have done in years past, that fruit has been injured seriously and the best thing the orchardist can do is to sell his crop now, using their agency as a medium to dispose of his stock.

The Cultivator's advice to citrus growers is to pay no attention to these representations. Fruit has not been hurt to any serious extent, as yet, and the prospect is, that the prices are going to remain where they have been for the past few months.

Careful investigation by honest, competent inspectors does not reveal any such condition of injury to fruit as was at first reported, of course some fruit has been nipped, but the great bulk has not suffered to any particular degree. The trees generally, appear to have been in good condition to resist attack by frost, and although the thermometer did go low enough to have done damage, the trees withstood the cold. It may be said in this connection that authorities hold that the thermometer gauge does not always indicate damage to trees and fruit, for while it may show cold enough to nip fruit, if the trees are healthy and vigorous they will stand a lower degree of cold than indicated by the thermometer.

Therefore let the orchardist not grow over anxious, nor dispose of his stock on unfounded, adverse rumors.

* * *

Deep Ploughing.—The Campbell system of dry farming, which so much is written about today, recommends as of the utmost importance to successful results deep and thorough stirring of the ground. The old method of skimming the soil simply does not restore the capillarity of the ground which has been arrested by the plow. Deep plowing and thorough harrowing does this, and here is the secret of Campbell's system. He turns the ground over with a deep plow, harrows it until it is in good condition to plant, leaving it in prime condition to receve additional moisture and retain what has already come into it.

It may well be stated as a general proposition that no soil returns its fullest capacity of good which it neglected in plowing and in harrowing. The corn sates in the middle West demonstrate this. A field which is skimmed and left lumpy will not grow a third as large crops of corn as one that is plowed deep even ploughed twice, and harrowed fine and cultivated often. We know this from practical experience, and the up-to-date farmer knows it and follows the rule of thorough soil preparation before planting.

Some how the idea got abroad in California in the earlier years that deep soil stirring is not necessary to successful farming, but it has been demonstrated that this theory is wrong, and that in a semi-arid country more attention is necessary in putting the ground in proper condition for crops than in the middle west, where the rains are usually abundant and the snow does much to return to the soil the elements which it needs.

We agree with the agricultural editor of the Los Angeles Times that this spring "as usual the soil will be skimmed with a gang plow." It ought to be disemboweled, so to speak, that the sub-soil which has become sodden from long absence of atmospheric influence upon it, may be given the opportunity to recuperate what it needs from the sun and air.

The Cultivator has been talking along this line for years and it is glad to say that increased interest is being manifested by farmers, although the time has not been reached, it seems when this interest is general. We quote here what the agricultural editor of the Times says in his department about deep ploughing.

"The fact that dry-grown crops fail in the arid West occasionally, no matter how thoroughly the plowing may be done, seems a bar to better cultivation among the majority of grain farmers, yet its value has been demonstrated by innumerable trials. For all soils that have underlying fertility should be stirred deeply, only those of inferior subsoil being profited by shallow plowing. The former includes the greater percentage of the grain lands of Southern California. It would be a novelty for some one to begin disking his grain land soon after harvesting, to be followed by deep plowing after the earlier rains."

One of the most useful subjects our farmers' institute conductors can bring up for discussion is this subject of soil cultivation for California crops. We need the most improved methods of farming applied to our soils as much as we do the latest methods of eradicating the pests which attack to our fruit trees.

* * *

Encouraging Outlook.—Just when the farmers were complaining of the absence of rain to complete ploughing for the spring crops and when the orchardists were irrigating night and day in anticipation of a dry season the entire State received a most generous rain which has turned fear to rejoicing and put the ground in fine condition for suspended agricultural pursuits.

Reports from all over the State are to the effect that the rain fall has been abundant for the time being, and that prospects are flattering for another year of prosperity in California. In some sections the rain was almost too heavy for the earth to care for it, all and rivers are swollen and small floods have resulted. But this condition is not general and we ought to be glad it is so.

All the weather prophets have classed 1906 as a year of much rain in this State, and some of them have told of floods which are to come later in the season, but we will not worry about that possibility, it is remote, being thankful that the outlook is bright for another great agricultural year which will bring easy times for the people.

Farmers should, however, make money while the times are auspicious, finish their ploughing and get their crops in as soon as conditions are ripe. By so doing the ground will be in the best of order if ploughed deep, and crops come on rapidly when the warmer days are in evidence.

* * *

Who is to Blame?—There seems to be a very large sized "coon" in the New York orange market, Telegrams sent from there indicate a collusion between certain interests to break down the market and to bring loss to California orchardists by flooding the market with poor and immature and frost bitten fruit. It has been hinted that the Citrus Union is at the bottom of the deal and that it is surreptitiously flooding the market with only one purpose—to break it and to bring disaster to its ancient enemy, the Exchange, and to its patrons, the citrus growers.

This is indignantly denied by the Union, whish says it doesn't have to resort to such tactics because it is doing well enough as things are going. It seems not to be known at present who is at fault, but the ugly rumors afloat point to agencies which put the blame on the "inner circle" of shippers which, it is supposed, belong to some organization which has the entree to the New York market. There is but one thing left for the orchardists of California to do if this matter goes on, and that is to organize a committee, independent of both the Union and Exchange, and investigate all the circumstances surrounding the transaction to the end that the blame may be put where it belongs and the guilty parties exposed. There is nothing to be gained by procrastination, while irreparable injury may be done to the citrus growers if this thing is allowed to go on.

The San Francisco papers report a lively demand for our oranges, but they say there is no demand for poor or different fruit. The Chicago packer tells the same story. One writer says:"It isn't a question of supplying the market with fruit, but it is a question of supplying it with good fruit." He also adds this forceful declaration: "If all graft and benefits were forever wiped out, most of this poor stuff would be kept at home where it belongs. It is more profitable there than it 'is here. Feed it to the hogs! Dump it back on the ground for fertilizer, but do not send it here, paying picking, packing, shipping and selling charges only to have the returns less than the actual value of the fruit on the coast, and everything else a dead loss. It is charged that if some one were not getting something beyond the legitimate profits of the business there would be less eagerness to send the stuff here."

It is in this possible graft where the "coon" is hiding, and he is the dangerous person who must be dragged to light and his scheme exposed. Shippers cannot permit their interests to be jeopardized by the indifference of either of the two organizations which now control the trade in California oranges, and the time to act is in the incipiency of the danger which threatens the citrus industry in this State.

So we say the matter should be probed and the guilty parties exposed, no matter what organization is behind them, if indeed there be one.

NEWS OF COUNTRY LIFE IN THE GOLDEN WEST

HORTICULTURE.

Some of the best peaches in the State are grown at Healdsburg.

In the vicinity of Sebastopol are the largest berry fields in the State.

A winter melon is the latest member of California's kaleidoscopic procession of fruits.

T. B. Fredendall bought the 13 acre orange grove of Percy Chinn last week. The consideration is said to have been $15,000.—San Dimas Eagle, January 4.

The orange crop in Marysville this season is large and of good quality, but the fruit is small. For some unexplained reason the oranges in many instances are not more than one-third the size they should be and usually are.

The Salinas Index says: Over 31,000 fruit trees, comprising Bellefleur apples, Newtown Pippins, and Winter Nellis pears, have been ordered for the Clark colony, in addition to ornamental trees in large numbers, for Greenfield.

The Hamilton-Burns Company, of Los Angeles, has purchased 200 acres of land at Nutwood station on the Southern Pacific near Anaheim, at a stated price of $100 an acre, and will set the entire tract to walnuts, oranges and alfalfa.

It is expected that the Mercantile Company which bought all the Association grapes from the Fresno owners are preparing to rush the goods east as fast as possible, and the S. P. is preparing to handle 1000 cars of the goods at once.

The Board of Supervisors of Tulare County will "stand pat" upon the county ordinance prohibiting the importation of rooted vines and cuttings into the county, and the Board of Horticultural Commissioners will see to it that the ordinance is enforced.

The shortage in the orange crop in Monrovia and parts of Duarte has not been increased by damage from frost. The desultory bloom on the orange trees is the best evidence that frost has not touched them. Lemon trees also are budding. In Duarte a little of the new foliage was injured in the lower groves, but the fruit escaped, so far as known.

This year's shipments of citrus fruits from Southern California have totalled to January 4340 cars, of which 3720 cars were oranges and 620 cars were lemons. Last year's season's figures were 3764 cars of oranges and 323 cars of lemons, a total of 4007 cars. The excess of the season 1905-6 over 1904-5 to date is 333 cars, of which 46 are oranges and 297 are lemons.

AGRICULTURE.

The Empire Asparagus Company started this week to plant 500 acres of land near Terminus, to asparagus.

The Placentia Orange Growers Association shipped three carloads of oranges last weeek, says the Fullerton News.

About 500 acres of land will be cultivated to sugar beets in the vicinity of Orosi and Sultana this season, for the Visalia sugar factory.

A sufficient sugar beet acreage has been promised about Orosi and Sultana to justify the establishment of a dumping station of the Pacific Sugar Company at that place.

Less hay than usual is being sown in the foothills this year around Salinas, and more orchards are being set out. In all probability not enough hay will be raised for local use.

Farmers' institutes will be held at Toluca January 18, Burbank the 22d, Fernando the 23d and Alhambra the 24th. Prof. W. T. Clark of Berkeley, will be present at each of them.

The Coachella valley where many farmers have located and are prospering from the wonderful productions of the richest soil in the state, are watching with trembling and fear the daily encroachment of the mysterious waters.

Senator Perkins has suggested to Secretary of Agriculture Wilson that he recommend to Congress the necessity of giving aid and encouragement to the hop growers of Southern California. Wilson promised to make a recommendation.

Reports come from Washington that the beet sugar interests are proposing to heap troubles on the head of Congressman Needham because he gave the casting vote in the Ways and Means committee in favor of the new Philippine tariff bill.

The alfalfa thresher has been through the neighborhood around Silsby lately, and all the farmers who had alfalfa threshed averaged more than 200 pounds of seed per acre, whch at 12½ cents per pound makes $25 per acre just for one crop.

In the vicinity of Santa Rosa and along Russian River there are hundreds of acres devoted to hops, the crop this season amountng to 24,000 bales. Here also are the splendid prune orchards which have brought Sonoma county into prominence.

Thermal and Coacehlla cantaloupe growers have agreed to employ jointly distributing agents for all western markets in instances where this can conveniently be done. In this manner each association will know how many cars are distributed each day and at what points. The secretary and manager of each association constitute permanent committee for joint distribution of cars.

LIVE STOCK.

That California professor who is working out a system for making hens lay the year round should get out a patent for perpetual motion.

A number of ranchmen and cattlemen at San Dimas, owning an excellent well and pumping plant, have incorporated as the Johnstone-Rutherford Well Company, with a capital stock of $20,000 fully subscribed.

Warren D. Gale, a young rancher who came to Claremont three years ago, and conceived the idea of building up a substantial business in the thoroughbred Angora goat industry, starting out on a small scale and adding to his herds as the opportunity offered to procure valuable animals.

How well he has succeded is shown by the fact that from his early start of a dozen goats, he now has nearly five hundred grazing on the plains and foothills of the ranch, and his sales of wool for the year will amount to several hundred dollars, while he has nearly three times as much demand for kids and milk goats as he can supply.—San Bernardino Index.

MISCELLANEOUS.

Santa Rosa has voted $200,000 for municipal improvements.

New Year's Day was the coldest in the history of Elsinore, says the Elsinore Press.

The Visalia Morning Courier is making a righteous war against gambling in that city.

A wireless telegraph station to cost $40,000 is to be established by the government at Point Loma.

The local gas company has made a cut in price of gas furnished to Oxnard from $1.50 per thousand to $1.25.

Sierra Madre is the latest Southern California town to be connected up with the Huntington trolley system.

It is estimated that in all parts of Los Angeles county there were erected during 1905, buildings aggregating in value $9,848,282.

The number and value of building permits at San Diego were much greater during the past year than ever before. The aggregate was $1,193,170.

Unless the flow into the Salton basin is checked, the little town of Mecca will be under one hundred feeet of water in the near future.—Ontario Record.

Alhambra is now making more rapid progress in population and public and private improvement, than any similar place in the county, so the Advocate declares.

Santa Ana merchants have been giving some unanimous testimony on the marked increase of business since the completion of the electric line into that thriving up-to-date city.

Secretary Taft has recommended to the President that he sanction the issue of a revocable license to the Union Oil Company of California to construct and maintain a pipe line across the canal zone.

A correspondent from Ventura says there is a boom in cement claims and rock in that county, and a prospect that before many months large sums of money will be invested in the cement industry.

The Bakersfield Californian reports that an oil boom has struck the extreme northeastern corner of Kern county in the Freeman Peak mining district, and claims covering some 5000 acres have beeen located.

The Huntington Beach Board of Trade has made a prize for the best kept yard and lawn for the coming year, from $25 to $50 for first prize, and made the other prizes $35 for second and $15 for third.

Santa Paula has seen several enterprises inaugurated during the old year says the Press, which will bring her good in years to come. Notable among these is the establishment of a new bank there, with solid citizens behind it.

A committee of citizens waited on the Santa Fe officials in Fresno a few days ago and presented a petition signed by 150 persons, asking that a station be established at the switch about a mile and three-quarters north of Dinuba.

Plans are being prepared under the order of the Board of Supervisors at Bakersfield for the construction of a modern ten-room high school building with a capacity of 400 pupils, and the plans will be formally adopted at the next meeting of the Board of Supervisors. The school building will cost $50,000.

More than 1,000,000,000 herrings were packed in tin cans as domestic sardines in 1905, the first time in the history of the Maine sardine industry that the figure has been reached. The value of the little fish in cans this year exceeds $5,000,000, making the industry one of the most important in the Pine Tree State.

Climate and Crops

U. S. Department of Agriculture, Climate and Crop Bulletin of the Weather Bureau, California Section, for the week ending Monday, January 15.

The weather was slightly warmer than during the preceding week, but frosts were frequent at the beginning of the week. Generous rains fell in all sections, with heavy rain in the foothill and mountain districts. The warm rains in the mountains caused rapid melting of the snow and the two combined resulted in a rapid rise of rivers in the Sacramento valley, but no damage has yet been done by overflow.

The warm rains were specially valuable in the central and northern portions of the State, where farm work was very backward. Plowing and seeding have been resumed and it is probable the grain acreage will be nearly up to average. Early grain and grass were greatly benefited and are now making good growth. Feed is still scarce in most places and stock are in poor condition, but there will be rapid improvement if warm weather continues. The rainfall is still considerably less than at this date last year except in Southern California, but if the usual conditions prevail through the remainder of the season there will probably be average crops.

Orchards and vineyards are in excellent condition and were also benefited by the rain. It is reported that the recent frosts caused no great damage to citrus fruits in Southern California, but celery and other tender vegetation suffered considerably. Orange harvest is in progress in the south; the yield is very good, but the fruit is smaller than usual.

CURE FOR RATTLESNAKE BITE

Pound up alum, put into cold water, make the solution very strong with alum; bathe the wound constantly until the swelling is all gone, which will be in twenty or thirty minutes; if bitten after breakfast will be ready for dinner. I have done some wonderful snake cures with this solution.—Mrs. Sarah Timothy in S. F. Examiner.

LINERS

FROST PREVENTION—FOR SALE AT half price, 400 Froude Patent Oil Fire Pots in good condition, used only once, part of them not at all. No further use for them. Also Electric Alarm Thermometer and fixtures. C. H. LOCKWOOD, Burbank, Cal.

FOR SALE—120 ACRES NEAR WOODBINE, Iowa. Good ground and improvements. Price $80 per acre. Will exchange for California land. Write to owner, L. B. Lauridsen, Woodbine, Iowa.

WALNUT TREES FOR SALE.—I HAVE 8000 2-year Santa Barbara Soft Shells which I will dispose of at the very lowest price. A. J. HIXSON, Burbank, Cal.

WANTED—ONE THOROUGHBRED Grey Brahma Rooster. MRS. J. F. MOORE, R. F. D. No, 2, Norwalk, Cal.

STANDARD-BRED BUFF ORPINGTON Eggs, $2.00 and $3.00. Fertility guaranteed. N. Hayden, Altadena, Cal.

Live Stock and the Dairy

SPAYING HEIFERS.

"I am often asked at what age it is best to spay heifers." I think the same rule applies here as with castrating males, and that it, the younger the animal is when the operation is performed the better. Heifers spayed when quite young develop masculine characteristics and often at four years of age I have seen them look like steers. If the operation is not performed when they are calves the next best age is when they are yearlings. After that age I do not consider it an advantage to spay, so for as growth and development are concerned. The only advantage that comes from it then is to prevent breeding.

A well bred heifer calf spayed when young by a competent operator is as nice to handle, as easy to keep, matures as early and makes as fine beef as a steer of the same breeding and age. The only real difference is the lighter bone. It would have delighted many of the readers of this paper to have seen some of the heifers that were shipped out of Bellefourche, S. D., this last season. They were three quarter grade Shorthorn heifers which I spayed as heifers. They ran on the range here until three years old and passed, and when started for market made as nice a bunch of stuff as you often find. If they could only have gone into a good Iowa field for a ninety day finish on corn they would have made market toppers.

I am often asked what the loss from spaying is. I estimate 2 per cent. but I believe I can safely say that I have never seen that rate reached for many years. In my own practice I use every precaution to prevent blood poisoning by thoroughly disinfecting every instrument used and by having the animal put in the best of condition for the operation. Several years ago it was found that nearly all of the heifers spayed would come in heat. This was simply because the operation had not been properly performed. There are too many incompetent operators who can go through the form of the operation, and there is no means by which one can determine whether it has been improperly done until the heifers begin to come in heat and later drop calves."—Geo. M. Clay.

MILKING MACHINE

At Stockton a new milking machine has been invented which is now in use on several dairy farms, and the outcome of its operation is being watched with much interest by dairymen. The Fresno Republican recently in telling about this machine, says, "it will probabaly meet with no better success than its predecessors." The Republican will be surprised should this device turn out a happy solution of the milking problem. If it shall do this it will be hailed by all dairymen with delight. It will solve the labor difficulty against which the dairy business today meets with most of its difficulties. The Republican says, "to raise grass and ensilage, in the East, or alfalfa in the West, and feed them to cows, is simple, but to milk those cows requires men willing to do the work, and they are scarce. Labor difficulty is the only serious problem of the dairy business, and the only obstacle is its indefinite expansion, especially in favored regions like the San Joaquin valley. If a machine could do the work everything else would be simple. And if the cow herself were a machine, no doubt somebody could devise another machine to extract the milk from her. But lactation is quite as much a mental and emotional as it is a physical process. Everybody knows that cows "hold up their milk" from an unwelcome or incapable milker. As a matter of fact they do not hold up their milk, but they simply fail to secrete it. As the mouth waters at the sight of luscious food, so the cow's milk glands pour forth their secretion in response to the accustomed stimulus. When the milking begins, the udder is by no means a mere passive vessel, full of milk. It is an active, living organ, containing some milk, and ripe to produce more in the milking process. A machine can extract the milk, but it is difficult to conceive of a machine that would hyptnoize a cow into the mental and emotional state necessary to "give down" her milk. The cow has a soul after all, and until we can devise a machine with a bovine degree of soul, milking by machinery is liable to fail."

.GAIT OF THE DRAFT HORSE..

The normal gait of the draft horse is a walk. He was not made to trot or run. It is important, however, that he acquire when he is first broken the habit of walking lively and walking slowly when a slow gait is required.

The gait is largely a matter of inheritance, and the draft stallion or mare that can walk briskly should be in all cases preferred to one that moves off as though it had all the time there was in which to go a short distance.

Much, however, depends upon the trainer. Most farmers when they break colts put them alongside some steady-going old mare, a regular "loitermobile," which may be all right to start with, but as soon as the colt moves off himself, let him acquire a brisk walk, as though the time was too short for him to do the allotted work. While for plowing heavy sod a slow steady gait is inevitable, and for plowing corn for the first time preferable, in almost every kind of farm work a beter job will be done by a team that knows how to step briskly.

The training of a draft horse is a comparatively simple matter, and yet it is of very great imoprtance to so train horses that they will normally move briskly, and at the same time adopt a slow steady gait when the necessities of the work on hand require it.

IT'S A POOR RULE A COW CAN'T BREAK.

A teacher was giving her class a lesson in substraction. "Now, in order to substract," she said, "things have always to be of the same denomination. For instance, we could not take three apples from four pears, nor six horses from nine dogs." A hand went up in the back part of the room. "Teacher," shouted a small boy, "can't you take four quarts of milk from three cows."

The thing is altogether practicable to supply water to the arid lands of the West. They could be made to sustain a population that would add greatly to the wealth of the country.

Creamery Machinery and Dairy Supplies

Cream Separators
Engines and Boilers
Milk Bottle Fillers
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Sanitary Equipments a specialty
Combined Churns
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Sanitary Milk Bottles
Sanitary Bottle Caps
Buhl Milk Cans
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24 YEARS WEAR NO REPAIRS

SEPARATOR FACTS

43 YEARS WEAR 75¢ REPAIRS

Just facts—that's all you want. Facts can't hurt you nor Tubular Cream Separators. Facts prove Tubulars outwear all other makes five to ten times over.

On August 2d, 1904, we started a No. 9 hand driven Dairy Tubular, rated capacity 900 lbs. per hour, on the hardest test a separator was ever put to—an endurance test to last until the wearing parts give way. This Tubular has now run 50 hours a week for 43 weeks—and is still running. Every week of this test is equal to a year's service in a ten cow dairy. No other separator made could stand such a test.

24 Years' Work—No Repairs	
Hours run	1,200
Pounds separated	1,080,000
Turns of crank	3,155,760
Turns of bowl	1,152,000,000
Oil used	8 quarts
Time oiling	About 4 min.
Time adjusting	None
Repairs	None

43 Years' Work—75c Repairs	
Hours run	2,150
Pounds separated	1,935,000
Turns of crank	5,652,070
Turns of bowl	1,864,000,000
Oil used	5⅜ quarts
Time oiling	About 7 min.
Time adjusting	10 min.
Repairs	75 cents

After 24 weeks, the balls in the frictionless bearing supporting the bowl showed wear. This was natural, for each had rolled over 32,000 miles. Renewing balls cost only 75 cents and ten minutes adjusting, yet made this Tubular as good as new. All Tubulars are equally durable. Catalogue P-260 tells about them. Write for it today.

THE SHARPLES SEPARATOR CO.

Toronto, Canada West Chester, Pa. Chicago, Illinois

¼ TO ½ BUTTER LOST THIS WAY

WHICH?

NO BUTTER LOST THIS WAY

Which way do you skim your milk? It is hard sometimes to realize just how great the loss of cream is with crocks and pans. Some people may not believe that a

U. S. CREAM SEPARATOR

skims enough closer than the old way to increase their butter yield one-fourth or more. But it does. Users say so. Here's an every-day example—

"ALTURAS, CAL., Sept. 1, 1905.

"The U. S. Separator beats them all for ease of handling and clean skimming. When we got the No. 7 we were making 40 lbs. of butter per week with pans. The first week that we run the Separator we made 60 lbs. and with less work.—KELLY BROS."

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are far superior to other like goods. The cost, efficiency and durability considered, are no higher than so-called cheaper grades. Everything on hand for the Dairy and Creamery. Write for Catalogues. Mailed free.

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Raising mules for the market is one of the most profitable things the Northern California stockman can engage in. The market shows conclusively that good-sized mules pay a good profit. Last week's St. Louis market report shows that the bulk of sale of mules 15 1-2 hands high were from $110 to $135 each, and those of 16 hands sold for $140 and $165, the toppers of the market bringing $210. Mares that are not adapted to mating with the very heavy draft stallions will bring good mules, if a large-sized jack is used.

SECURITY

Stock Food

is sold on the honest plan of satisfaction or no cost. This is a straightforward plain talk and means just what it says.

Use **Security Stock Food** (glutenized) for growing animals; for fattening animals; for work horses; for milch cows. The Food won't cost you a cent if you can't see that **Security Stock Food** has saved feed, made quicker growth; kept your animals in better condition, given more milk, and made you more money. Write us if not satisfied and we will refund price in full. You are the sole judge. No questions asked.

For five years this guarantee has been on every package sold. It also covers Security Poultry Food, Lice Killer, Gall Cure, Colic Cure, Worm Powder, Calf Food, Heave Remedy, Healer and Rheumatic Liniment. Security preparations are sold by dealers in almost every town in the United States, who will recommend them highly and "back up" our guarantee.

SECURITY IS THE ONLY GLUTENIZED STOCK FOOD.

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MINNEAPOLIS, MINN.

Dr. PAXTON'S COUGH AND THROAT REMEDY. TRADE MARK

For Catarrhal Fever

Pink Eye, Distemper and all diseases Nose and Throat

Cures the sick and acts as a preventive for others, and is given on the teeth and tongue. Safe for Brood Mares and Colts and all others. $1 00 per box, ½ doz. $5.00. Sold by druggists, or sent express paid.

Paxton Veterinary Medicine Co., Box 95, Sta. C, Los Angeles, Cal

Fine Holstein Bull

Young bull 22 months old; also 3 heifers 2 years old, good milkers, just freshened.

Raphael Bros., Moneta, or this office.

John Lynch Breeder of Registered **Shorthorns**

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GEO. C. ROEDING, BREEDER OF HIGH-GRADE

Thoroughbred Holstein Bulls and Heifers

Thoroughbred Berkshire Boars and Sows

FRESNO, CALIFORNIA

Thoroughbred Poland China Swine and Black Minorca and Barred Rock Poultry

High grade stock of best strains Young stock for sale.

M. BASSETT, HANFORD, CAL.

BERKSHIRE BOARS—ALL AGES

T. WAITE, PERKINS, CAL.

The San Gabriel Valley Herd of

Ohio Poland China Hogs

Won 25 ribbons, 2 Gold and 2 Silver Medals at State Fair at Sacramento, Cal., in 1904. The great imported boars, Chief Guy and Ohio's Chief, at head of herd. Also Black Minorca chicken eggs in season. Stock for sale, also bred sows. W. R. McCASLIN & SON, Walsh Station, Sacramento County, Cal.

VASELINE IN MILKING.

An Australian dairyman, who has a remarkable record for milk that keeps sweet, gives the following method of milking:

How do we do this? You may inquire. Not by any red tape, white suit covered pail or dry teat milking. We conduct too large an establishment to waste time or money in gingerbread extras.

When a dairyman tells me he practices dry-teat milking, I know that he either does not milk cows himself or does not state facts. It is physically impossible to milk any herd of cows and keep their teats dry. There are a few cows in every herd that can be milked with dry teats, but they are the exceptions.

I visited a dairy herd some time ago that advertised in a neat booklet that they milk with dry hands. The proprietor of this herd is a stickler in his methods, but all the same I saw his men wipe their hands on their overall legs repeatedly to keep them dry when milking short-teated cows.

We take a small amount of vaseline on the fingers of the right had, sit down to the cow, and with the left hand brush off her flanks and udder, then annoint the teats, and after the teats are lubricated, rub both teats and udder with the palm of the hand.

This fixes any dust or bacteria that might drop off during milking, and the ease of milking will astonish anyone who has not tried this method and the most surprised party will be the cow herself, if she chances to belong to a dry-teat advocate.

LONG DAIRY TESTS.

"A well-known dairy paper declares that weekly tests of cows are misleading, and calls on the breeders and the press to take steps to put a stop to them. It is true that a week's test is not a criterion of the cow's value in a dairy herd, but it is also true that it is a great deal better than no test at all. A year's test is made only with a greater outlay of time, labor and money than most men can afford. If made with a view of making a high record for the cow there is danger of injuring her. Many breeders can not take the trouble and risk of such a long test when they can by a shorter one ascertain to some extent the cow's capacity. All of them can keep a yearly record, but keeping a record of a cow's work and making a test are very different things. We favor more long tests if they can be made without injury to the cow which is doubtful. And we favor more short tests because they are very useful to determine the capacity of a cow for the time under test, which is clearly stated and no one is deceived. As to all tests it has been proved that the high feeding necessary to greatest yields does not pay; a cow may be feed too much for present and subsequent profit. Hence it is out of the question to make them in connection with everyday dairy work."

The Jersey Bulletin in commenting on the above says: "Any steps taken to stop weekly tests (or any other kind of tests) would meet with complete failure. It would be more "Frenzied Dairy Science."

CONSIDER THE BOY.

"Every father will do well to give his boy a piece of land to cultivate with the understanding that the returns shall be the boy's own, if he cultivates it well. Many a fine boy has left home and been ruined, simply because his hard-fisted father would not let him have something to call his own."

DEHORNING CATTLE.

Professor Spellman of the Agricultural Department declares that it is possible to dehorn a whole breed of cattle by introducing into the herd a single pure polled animal, although this would require more inbreeding than is desirable. The problem is much more easier when a number of breeders work in parallel lines so that strains are always available that are not so closely related. The only difficulty in applying the principles of Mendel's law in dehorning a breed of cattle arise from the fact that the hybrid animal is itself polled, although it is capable of transmitting both the polled character and the horned character to its offspring.

The general principle to be used as a working basis is the important fact that when a number of crosses are secured between the polled and horned animals and these crosses themselves are crossed, one-fourth of the progeny will be pure polled animals incapable of transmitting horns to their progeny and these pure polled animals are to be used as a basis upon which to build a pure polled breed.

It is entirely practicable for every breeder to secure enough of these pure polled animals as a basis upon which to gradually work out the horned animals, and increase the pure poll until they constitute his whole herd.

WHAT IS THE BEST BREED OF SHEEP?

The question of the best breeds of any of our domestic animals is one that never will be settled. Generally the best breed for anyone is the breed he likes best, for in that he will take the most pride, give it the best care, and hence it will do the best.

None of our domestic animals admit of so great a variety as the sheep and none is susceptible of improvement in any given direction more readily. It is remarkable how quickly they respond to skillful breeding. The weight of the fleece can be doubled with a few crosses of the Spanish Merino with the native light-shearing, open-wool breeds, and the weight of the carcass greatly increased by the use of the heavy mutton breeds with the smaller framed Merinos.

The "best breed" depends very much on locality and other conditions. On cheap, rather tough land not well adapted to cultivation no breed will do better or give better returns than the Merinos. They are hardy, far less liable to disease and shear much more wool than the open-wool breeds. So many times I have known men to change from Merinos to some of the mutton breeds always to regret it in the end.

I have known men to introduce a coarse ram into their flocks of good Merinos and after a few years be glad to get back to a flock that had no infusion of coarse blood.

The first cross is the only one that gives anything like satisfaction. After that detioration seems to set in at a rapid pace. The ticks are at home with the coarse wools. It seems impossible to get rid of them and to keep entirely clear of them. I have offered my shearers a $1 a piece for all the ticks they found on my Merinos, and never yet had to pay out any dollars in that direction, but some twelve years ago when I began to raise a Shropshire ram and began to raise mutton lambs I got plenty of ticks and in spite of the most thorough treatment was unable to keep entirely clear of them while breeding in this direction.

A few years ago a friend of mine paid a great price for a small flock of one of the mutton breeds. My neighbor and I bought ram lambs of him at different times and not one of them lived to be three years old and two of them died at the age of eighteen months. The flock became so diseased that my friend sold out and quit the business entirely, and he said to me "The next flock of sheep I own will be one of the Merino family."

Another friend of mine, who has kept a large flock of coarse wools for a number of years, said to me, "I am drifting back to the Merinos. So many of my sheep die young. I lose a number every year without any apparent cause. At four years they seem like old sheep.

Where conditions are favorable and one wants to keep a large flock, there is no breed that pays so well as the Merinos; but where one only wants to keep a few, and mutton lambs are to be a specialty, the coarse wools are all right. I have in mind now a man who always keeps twenty ewes. He has his lambs come in February and sells them in June or July. Makes them weigh from sixty to seventy-five pounds each, and gets a good remunerative price for them.—E. P. Snyder.

Advertising Column for Members

OF THE

JERSEY BREEDERS ASSOCIATION

OF SOUTHERN CALIFORNIA

Organized for the general advancement of Jersey interests, to extend knowledge of their superior merits, for the mutual benefit of members, and to increase the profitableness of one of the State's greatest industries. Breeders are requested to unite with the Association.

BULL FOR SALE

Having sold my ranch I am forced to sell Golden of Biltmore. 60082, a grandson of Golden Lad's. Golden of Biltmore is one of the best, ***if not the best*** sire on the coast, several of his daughters less than two years old selling for over $200 each. Highest bidder for next sixty days takes him. If everything is not just as represented, I will give anyone the ***bull free of charge. I sell on merit.***

C. S. Burgess, Riverside, Cal.

Pure St. Lambert Bull

—ST. LAMBERT OF RAMONA, No. 62633,—

heads the Ramona Herd of Registered Jerseys of

Geo. W. Thomas. Riverside, Cal.

The Whiting Jersey Stock Farm Co.

Have moved their herd of Jerseys from San Bernardino, Cal., to the famous Imperial Valley, and hereafter their post office address will be Heber, San Diego Co., Cal., from which they will conduct all their business. Abundant green feed every day in the year will be of great advantage in the best development of our young stock.

Whiting Jersey Stock Farm Co., Heber, San Diego Co., Cal.

LEMONITA HERD

Leffingwell Rancho, Whittier, Cal.

Service bull "SARGENT FOX," 64833. Bred on the Island of Jersey. Sire, the great Flying Fox, that sold at auction for $7.500. Dam, Miss Sargent, reserve winner over Jersey; winner of seven first prizes and five championship cups. "One of the grandest cows the island has ever produced."

VENADERA HERD

OF REGISTERED JERSEYS

Offers for sale three richly bred heifer calves sired by Marigold's Exile King, out of good cows. Also a yearling son of the great cow Nettie Underwood, official test 10,992 lbs. milk, 668 lbs. butter in one year. For records and prices write

GUY H. MILLER, RIVERSIDE, CAL.

Jersey Mead Stock Farm

HIGH CLASS REGISTERED
JERSEYS, POPULAR
STRAINS

GEO. E. PLATT, 316 E. 8th St., Los Angeles, Cal.

Oakhurst Jerseys

Sons of imported Golden Marquis out of prize winning and tested dams. for sale.

L. Bradbury Duarte, Cal.

Kings Victor King of St. Lambert

At head of herd. Young stock for sale.

H. N. WILLIAMS COMPTON, CAL.

La Palma Stock Farm

We have some of the very finest Registered Poland-China Swine from 2 to 6 months old, both sexes, for sale. Also older boars ready for service.

Also a fine Registered Jersey Bull and Six Registered Cows for sale.

Write for what you want.

J. A. CAMPBELL, Buena Park, Cal.

Notes of Poultry Show

The first show of the Breeders Society of Southern California ended in a long needed and glorious rain which left most inglorious looking birds and exhibits. The tents were delightful till the rain became heavier, when they leaked. Every effort was made to protect the birds with good success, and it is to be hoped that all the valuable biddies reached home in the pink of condition.

Some which were in coops decorated with red calico certainly did, for the dripping from the cheap red prints stained some of the whites to a handsome pink and the announcement was made that "Pink Dottes" and "Pink Rocks" were the newest.

However, the rain was not sufficient during the show to seriously interfere and good attendance prevailed to the end.

Financially it was a success and the treasury looks good. It contains between $1000 and $1500 above all expense. Backers of the "guarantee fund" are not worrying.

Mrs. Rhoda E. Durfee of Santa Ana made a fine showing of fine White Rocks. Mrs. Durfee is one of the conscientious breeders of strong constitutioned birds which are at the same time prize winners. Mrs. Durfee's entire time and personal effort are given to her poultry.

The Judges, Messers. Tyler, Butler, Hogue and Thomas gave general satisfaction and all said that they felt that most conscientious work was done.

Ed. Hart came down from Clements, up near Sacramento, with a great showing of Bronze turkeys. His first premium tom also won the Poultry Breeder's cup for finest single bird of any breed in the show. It is a beauty. Mr. Hart is a pioneer turkey breeder, having followed the business for 27 years.

Geo. H Randall of Santa Ana exhibited some beautiful W. C. Black Polish also Buff Leghorns. Mr. Randall has extended yards at Santa Ana where his White Leghorns are the standby. His love of the fancy and pure blood impel's him to breed more than the one variety and he won a number of premiums on his entries. We hope to speak of his yards some day.

Mrs. F. T. Hungerford did things with her Indian Runner ducks. 1st old drake; 1st and 2nd old duck, also same on young duck and young drake and 1st on pen. On W. Wyandottes, on four entries, she took 2nd and 3rd pen; also three firsts and a second on W. Minorcas.

Mr. Brubaker of Hemet Poultry Yards made his first exhibit and won some ribbons. He handles Brown Leghorns, W. Wyandottes, W. Leghorns and Houdans.

W. M. Humphreys did great work with his exhibit. He won the Times trophy for finest exhibit of any breed, three silver cups also twenty out of a possible twenty-three regular premiums. Mr. Humphreys is a consientious and careful breeder of the Rocks and his winnings are only an indication of that care.

Mrs. T. R. Griffith won favor and premiums with her Blues (and andalusians). She has an ideal which she has maintained till the Griffith strain is becoming recognized.

Mrs. E. L. Cowan of Santa Ana was in the winning class with her R. I. Reds. And Mrs. Cowan was on hand to give information regarding her birds and yards.

The way the crowds rolled in, even though the rain was a surprise to all, especially the management. California has a liking for blooded stock, and it believes in supporting these shows of such stock.

The Blue Ridge Blues were in fine feather and were winners. Mr. Brown says his stock is better than ever as producers and certainly they are in fine feather.

The Mission View Poultry Ranch had one of the longest rows of coops and its decorations were most attractive and dainty. The Mission idea was carried out, even to the bells, and the delicate effect of the crepe paper festoons won almost as many favorable remarks as her White Wyandottes won premiums. Mrs. Hubbard won the White Wyandotte Club Cup.

H. M. Stiles of San Diego entered his White Rocks and carried home some ribbons. Mr. Stiles is secretary of the San Diego Association and one of the enthusiastic breeders of the lower country.

And there were others, yes lots of them. But it can all be appreciated only by those who saw it—and the members who feel good over the big cash balance.

MONEY IN TURKEYS.

Here is a story of poultry profits that will be hard to equal; A year ago Christmas T. J. Elliott of Winters attended a turkey raffle at which he won two hen turkeys. He then bought a gobbler and took the three home to his wife as a Christmas present. Mrs. Elliott turned the turkeys into the orchard and took good care of them the ensuing twelve months. Tuesday she presented her husband $100, even, as the net result of turkeys she had sold from the increase of the original three. Having plenty of room and an alfalfa field for the birds to run, the keeping of them cost nothing, but the incident shows something of the possibilities of a too much neglected industry.—Sacramento Bee.

S. C. Rhode Island Reds

Six years continuous and exclusive breeding of Reds. First on cock at L. A. Show, '06. Eggs, per 15, $2.00. **MRS. E. L. COWAN, R. F. D. 1, Santa Ana.**

Brown and White Leghorns

Prize winners at L. A. Show, '06. Eggs from good laying strains. Eggs, special matings, per 15, $2.00. Incubator lots, $6.00 per 100.
Hemet Poultry Yards, Hemet, Cal.

WHITE AND BUFF **Leghorns**

Old and young stock for sale. Eggs after January 1. Write for prices.

J. F. Sarmento, R.F D. Box 4, San Leandro, Cal.

Blue Andalusian Eggs

Exhibition or utility birds. Hens have free range. Eggs, $1.50 and $2 for 15; $7 per 100. Stock for sale. ***Mrs. J. S. Duff, 3145 S. Hoover St., Los Angeles, Cal.***

Young Half-Wild Turkey Gobblers For Sale

Price $12.00 Each.

Mrs. N. Frank Morse - Fullerton, Cal.

FINE STOCK AND EGGS FOR SALE

Some thoroughbred White Leghorn, Orpington and White Rock Cockerels for sale at reasonable prices. White Rock Eggs, $1.50 per 15, fertility guaranteed. Address
L. G. Wilhite, 10th and A Sts., Tropico, Cal.

EGGS FOR HATCHING

from a heavy-laying strain of

SINGLE COMB WHITE LEGHORNS

I guarantee 100% fertile. Write for prices.

Golden State Poultry Yards, Lordsburg, Cal.
T. E. Mills, Prop. Home Phone 1720

30 DAYS TRIAL
Buy From Our Factory—Save One-Third.
PRACTICAL INCUBATORS positively the best. Hatches more and stronger chicks. 10 YEARS' GUARANTEE
Cat. free. PRACTICAL INC. CO., 720 S. 11th St. San Jose, Cal.

Winner New York, 1904, score 97¼. Used as a model in the American Standard of Perfection.

Farm at Clearwater on Santa Ana Electric Line

W. W. HOWARD'S
S.C. WHITE LEGHORNS

Best Strain, Best Birds.
Greatest Layers. Largest Eggs.
WIN THE BLUE AT THE ST. LOUIS WORLD'S FAIR.

FIRST PRIZE HENS, St. Louis World's Fair; also at Madison Square Garden, New York's Great Show, 1905.

All specials and medals—best hen, best head, pure color.

FIRST PRIZE COCK At Madison Square, New York, 1905, and beating St. Louis World's Fair and Boston winners.

FIRST PRIZE PULLET at Madison Square Garden, New York, 1905, as well as one of the best cockerels in the U. S.; were sired by our famous Rob Roy Jr.

Our patrons report grand success with pullets from our stock; 26 eggs per month, 56 eggs in 64 days, 18 eggs in 19 days; eggs that weigh 2½ to 3 ounces.

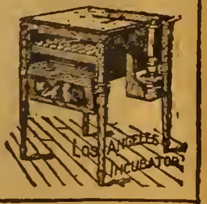
229 eggs already this season.

Improve your flock with one of our large, beautiful White Cockerels.

Birds and eggs for setting. Price list mailed on application.

THE W. W. HOWARD CO.
(State Vice-President National S. C. White Leghorn Club)
2329 Hermosa St. ***LOS ANGELES***
Phone West 3999 Home 24902

SUCCESS ☞ SEND FOR CATALOGUE
IS ATTAINED WITH
LOS ANGELES INCUBATORS
LEE'S LICE KILLER EGG MAKER | LARGEST POULTRY SUPPLY HOUSE IN THE U. S.
HENRY ALBERS 315 S. MAIN ST. LOS AGNELES



Caponizing Set

Double Your Profits by Caponizing.

Complete with Instructions, $2.50, Postpaid

STOCKMEN'S SUPPLY CO.
FRESNO, CALIFORNIA

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK

BUYS THE WORLD'S FAMOUS EGG FOOD NO. 4

MIDLAND

IF YOU WANT EGGS
YOU WILL FEED NO OTHER

Used by all the largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the **GOLD MEDAL** at the St. Louis World's Fair for greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1604.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A FILCHER, Commissioner.

And Now Comes New Reward for Merit:

Read the following telegram received from the Lewis & Clark Exposition at Portland:
"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

PETALUMA INCUBATOR CO.

Main Office and Factory, Petaluma, Cal., Box F. Los Angeles, 505 South Main Street
San Francisco Office and Salesroom, 33 Market St.

Profit in the Poultry Yard

PROMOTION OF THE CALIFORNIA POULTRY INTEREST.

Before we can properly consider how best to promote the poultry industry in California, we must make a survey of its present condition. The annual product of poultry and eggs for California, according to the last census, is upwards of 96,000,000, at the same itme the importation of eggs amounts to 17,537, 820 pounds, valued at between $2,000,000 and $3,000,000. Here we have one striking fact which shows that there is room for expansion to supply our home markets, to say nothing of exportation.: But the annual amount of eggs and poultry produced does not show on the face of it whether or not it has been a profitable enterprise for the producer. Are our poultrymen prosperous? There are in this State a number of persons engaged in poultry husbandry, who have been thoroughly successful, whether it be from the standpoint of the business man or from the farmer's point of view. Much credit is due to these people, as in most cases they have no example to follow, but have had to educate themselves. It is owing to their energy, industry and perseverance that we are enabled to enjoy the highly creditable and instructive poultry shows annually held in different parts of California. But a very few days' travel and brief investigation would disclose the fact that there are a large number of men who are attempting to raise poultry for profit in anything but a rational manner. Some of these men desire help, some are ignorant of the fact that assistance can be had, and again there are those who do not care to receive any aid at all.

* * *

The poor method and practices which one meets with are due to some extent to lack of sufficient co-operation of science and practice. There has been very little scientific attention paid to the hen as compared with the study which has been carried on with the cow, horse, or hog and considering the great importance of the poultry industry it is not right that this should be so. The value of the poultry and egg product for the United States, exceeds $300,000,000 annually, which is about three fifths of the value of the dairy products and not much below the valuation of the cotton crop. Does the poultry industry receive proportionately the scientific attention from the State Experiment Stations of the United States?

In California the relative position of poultry products, in 1900, is shown in the following statement:

Wheat, 20,179,044; hay and forage, $19,436,398; orchard produce, $14,526,786; animals sold, $13,305,165; dairy products, $12,128,471; barley, $10,645,723; tropical fruits, $7,219,082; poultry and eggs, $6,356,746; grapes, 5,622.825.

* * *

For investigations, relating to viticulture, the last legislature appropriated $10,000 while only $4,000 was similarly apportioned for experiments with poultry. It is true that some of the Eastern Agricultural Experiment Stations are devoting time and attention to the improvement of methods and the betterment of the poultry interests in their respective localities. But our conditions are so different from those met with by our Eastern brothers that we in California can not follow the roads travelled by them but must blaze a trail for ourselves. There has been considerable advance and progress made along this line as shown by the papers read and discussed at the meetings of various county poultry associations, and by the excellent poultry journals published in our State. But there still is room for improvement in many, by far too many, instances. It would be far better to describe what a typical poultry farm for California should be than to describe a typical California poultry farm.

* * *

It would be impossible, within the time allotted to me, to thoroughly discuss this phase of the question—suffice to say that the plan generally practiced, that is, the colony plan, does not, nor will it ever, conduce to systematic and highly progressive poultry culture. Such an end can ouly be attained by the intensive plan and statistics fully bear out this statement.

* * *

The legislature of 1902-3 realizing the necessity for proper experimentation looking towards the improvement of conditions among poultrymen appropriated a small sum for the establishment of a poultry experiment station at Petaluma. At this station the question of breeding, feeding, and treatment of diseases are taken up and two very valuable bulletins on fowl cholera and fowl tuberculosis have been issued as the result of some of the work of the California Poultry Experiment Station.

Among the lines of experiments under way is a practical illustration of the intensive system of poultry husbandry. But owing to the smallness of the appropriation, and also because of the uncertainty of its renewal, the ideal system sould not be carried out. We intend to establish such a plant, in the near future, on the University Farm and prove to those interested the advisability and economy of conducting the poultry business along such lines.

In carrying out scientific investigations the workers must be actuated by two motives—they must not only look toward helping the poultrymen, but bear in mind that it is their duty to be of as much assistance as possible to the consumer. It would be far more to the advantage of the poultrymen to have a more constant production of eggs at a more moderate price than a few eggs at an exorbitant rate at one time and a surplus at low prices at other seasons. It certainly would not be just to teach the producer how to get rich at the expense of the consumer. It is far more equitable to try to so regulate hatching and raising young stock so that the price of eggs may not be, as at present, almost prohibitive for many who require eggs as part of their diet.

The fact that eggs are sold by the dozen and not by weight is an obstacle to progressive work among a large number of producers. There is no incentive to the production of large eggs. It has been stated by some that the selling of eggs by weight would cause trouble in the

White Plymouth Rock Poultry Ranch
Eggs for hatching from First-Class Stock, $6.00 per 100, $1.50 per setting 15 eggs.
J.T. DAVIS, Prop. POMONA, CAL.

BUFF ORPINGTONS
Eggs from strong constitutioned, producing birds. $1.25 per setting, 2 settings, $2.00.
Robert Westcott, R. F. D. 115, Gardena, Cal.

Some Winnings
OF THE
Mission View Poultry Ranch
AT THE
Southern California Poultry Show, 1906

WHITE WYANDOTTES—
PEN—First, Fourth, Fifth.
COCK—Second, Fifth.
COCKEREL—First, Third.
HEN—First, Second, Third, Fifth.
PULLET—First, Fourth, Fifth.
GOLDEN LACED WYANDOTTES—
PEN—First.
MAMMOTH BRONZE TURKEYS—
ADULT TOM—First.
YEARLING TOM—Second.
HEN—Second, Third, Fourth, Fifth.
BUFF COCHIN BANTAMS—
COCK—First.
HEN—First.
COCKEREL—Second.
FAVORELLES } ALL AWARDS
LAKENVELDERS }
RING NECK CHINA PHEASANTS—
PAIR—First.

Also won National White Wyandotte Club Silver Cup on First Pen, also from same club three silk ribbons for First Hen, First Pullet and First Cockerel.
In the White Wyandotte class the competition was the hottest ever on the coast, with 150 entries

Mission View Poultry Ranch
Mrs. C. D. Hubbard, Prop. San Fernando, Cal.

Mountain View Poultry Yard
Eggs for hatching from thoroughbred Buff and Black Orpingtons and Silver Penciled Wyandottes. A few choice Black Orpington cockerels for sale.
Mrs. C. J. Jacobs - Box 356, Monrovia, Cal.

BUFF LEGHORNS
A few cockerels for sale. After Jan. 1 eggs from choice mated pens, $1.25 per 15.
Chas. G. Miller, 40 Elm St., Watsonville, Cal.

Single Comb White Leghorns
Thoroughbred Stock. Eggs, $1.50 per 15. Send for illustrated catalogue.
John P. Boden, 138 Second Street, Watsonville, Cal.

Blue Andalusians
Three distinct strains, the Cosh, Morse and Griffith. Eggs per 15, $2.50 and $3.50. Incubator lots this year, $7.50 to $15.00 per 100.
MRS. T. R. GRIFFITH
Phone West 841. 3111 Walton Ave. Los Angeles

White and Silver-Laced Wyandottes
White Plymouth Rocks
White Leghorns and Black Minorcas
Plymouth Rock and Wyandotte eggs, $2.00 per setting, $8.00 per hundred.
Leghorn and Minorca eggs, $1.50 per setting, $6.00 per 100.
I have been breeding thoroughbred poultry for over 20 years and have as fine stock of these varieties as there is on the Pacific Coast.
I also hatch and can supply little chicks from a dozen to a thousand from the above varieties delivered anywhere within 72 hours of San Jose. Prices on application.
J. S. Smith, Box 526, San Jose, Cal.
YARDS—CORNER MOORE AND CHAPMAN STS.

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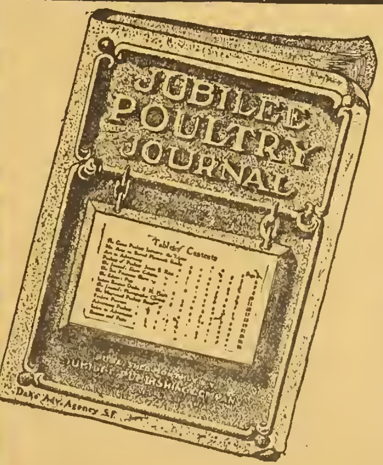
MARDEN EGG FARM
HYNES, CALIFORNIA
Breeders of S. C. White Leghorns Exclusively
We have but one grade of eggs to sell for hatching From our breeding pen composed of selected stock that are bred for great egg production. Price, $1.50 per 15, $5.00 per 100. Also a few choice Cockerels at $5.00 each. SEND FOR ILLUSTRATED CATALOGUE
Marden Egg Food
Guaranteed to be Pure
The only food scientifically compounded by a practical poultryman. Not composed of cheap mill feed or drugs. Many are using it with great success. A 100-lb. sack makes 1600 lbs. of Balanced Ration. If your dealer does not keep it, send to us and we will send you a 50-lb. sack for $2.50 or a 100-lb. sack for $4.50 and we pay the freight. SEND FOR BOOKLET.
Address, LEO. W. MARDEN, MANAGER



EGG MONEY!
There is **Money** to be made in **Poultry; more money** from **Good Poultry; much more money** from the **Best Poultry.** To get this money you must **Know** poultry; must **Know right** methods; must **Know best** markets—in short **you must Know how!**
The Jubilee Poultry Journal
will help you to **know**—will teach you **how!** It's cost? 50 cts. per year; three years for $1.00. 32 to 40 big pages every month. High-grade paper magnificently illustrated. A California paper—Intensely practical. **You need it. Subscribe right now.** It's "Worth While." Sample copy mailed free.
Energetic Agents Wanted—You can make Big Money
JUBILEE POULTRY JOURNAL
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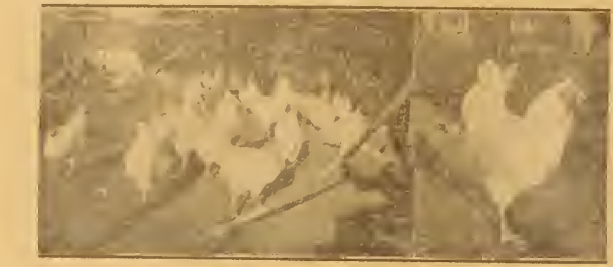
Poultrymen Attention!
We want you to send and get our big free 124 page catalogue and poultry book, contains 300 illustrations, and much valuable, plain, common sense, everyday chicken talk. It cost a lot to print this book, but we are glad to say that it's ***Free to You*** for the asking. The "Old Trusty" is the Incubator that had the best hatch for the recent Los Angeles Poultry Show—every chick strong and healthy. Did you see the others?
Send today for the big catalogue—it's worth while.
The McClanahan Co.
711 South Main St. Los Angeles, Cal.

retail trade in making change. To a certain extent this would be so, but a step in the right direction would be to make a minimum standard, i. e., require all eggs to weigh at least two ounces, or twenty-four ounces per dozen. Had such a law been in operation during the current season there would have been many dozens of eggs in Berkeley sold at 60 cents, subject to discount.



Pedigreed White Rocks

These are a few of the problems which are necessary to be solved in order to promote the poultry business and at the Station in Petaluma and in the laboratory at Berkeley we are doing our best to accomplish this end. Much of the successful outcome of the experiments will help the poultrymen and thus promote the industry, the greatest good must be expected from organization and co-operation among the poultrymen for better and more systematic work, both as regards feeding, breeding and general management. Until those interested do organize and cooperate it will be almost impossible to put into operation a food inspection law for the guidance and protection of the feeder. Were we exercising such a law at present there would not be on sale the large number of proprietary foods selling at high prices, far beyond their food value or for sale for the feeding of the horse, cow or swine, for the reason that the advice and conclusions of agricultural experiment stations, resulting from careful scientific studies, show that the feeder can obtain the best results without the use of proprietary or condimental foods.

It would appear that, when similar extended investigations for poultry shall have been carried out, there will not be the showing as at present, by the manufacture of the foods in question. Not only is a food inspection law necessary with reference to proprietary foods, but also in connection with the sale of the ordinary cattle and poultry foods, such as the alfalfa meal, clover meal, bran, etc. It can be truly said that alfalfa is a most valuable food for poultry and therefore alfalfa meal when made from the first quality alfalfa hay, is a highly desirable product. But on the other hand, when we find material labeled such that one would infer that its origin was the best alfalfa hay, showing, upon chemical examination, less than 13 per cent. protein, it is far from being what a poultryman requires and at same time costs far more than the nutritive value warrants. It certainly would be to the decided interest and benefit of both consumer and producer, if the pernicious practice said to be in vogue by some dealers of placing store eggs in the same case with fresh laid eggs and selling the whole as fresh eggs might be prohibited. A food inspection law, properly exercised, would soon prevent such impositions. These are just two instances emphazing the urgency of the passage of the law already referred to.

* * *

During the last year a large number of requests for advice have been received at the station from poultrymen who have had difficulties with their flocks, arising from either improper feeding, or from a lack of knowledge necessary for the successful raising of young chicks. These appeals have been so numerous that they confirm the opinion of the writer in that one of the means of promoting the poul-

Standard Bred S. C. White Leghorns

EXTRA LARGE BIRDS AND HEAVY LAYERS. Eggs, $2 per 15; $8 per 100; $60 per 1000 from January until July only.

CAPTAIN MITCHELL SANTA BARBARA, CAL.

Author of "A Practical Poultry Plant for Southern California," $1.25 cloth binding, on sale by Calif. Cultivator

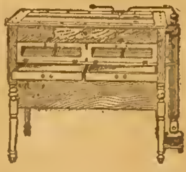
Emery's Pure Meat Meal

Don't believe all we say, but just enough to buy our Poultry Foods

Ask your nearest dealer for them and take no imitations

Emery's "B. B. & B."

THE PACIFIC GUANO & FERTILIZER CO. Successors to N.Ohlandt & Co San Francisco, Cal.



The Stockton Incubator

Is now manufactured under new management and is in every way put up as a first-class machine. Our 1906 model is a perfect working incubator, economical to run and gives a fine hatch.

Winner of silver medal at Pan-American, also medal at California State Fair. Write for circular and information.

Stockton Incubator Co.

Marshall & Barnes, Props. Stockton, Cal.

White Plymouth Rocks

NOTHING ELSE

The best utility fowl grown. The one that is being adopted by practical poultrymen who are in the business for the dollars produced. At the San Diego Show, just held, we won 13 out of a possible 15 premiums, 3 silver cups, etc. See our exhibit at the Los Angeles Show, Jan. 9-13. Eggs from standard-bred Rocks, $1.50 per 12.

WM. M. HUMPHRIES, 241 N. UNION AVE., LOS ANGELES

Dean's Pacific is an Incubator built on scientific plans and has all the latest improvements. Every machine guaranteed. "Facts From Experience" and Catalog for the asking. Address ***Dean's Place, 2509 Central Avenue, Los Angeles.***

El Oro Poultry Farm

H. H. Holland, Prop.

Fresno, California

Won as Follows

At Alameda:

Four Firsts and One Second, from Six Entries.

At Fresno:

Fifteen First Ribbons, Three First Pens, Ten Second Ribbons, One Second Pen, Fifteen Third Ribbons, Five Fourth Ribbons, Three Fifth Ribbons.

Fresno winnings brought Three Handsome Cups. Lots of Stock for sale and orders being booked for Eggs from Blue Andalusians, Black Minorcas, Buff Orpingtons, White and Brown Leghorns, Barred, White and Buff Rocks, Buff Cochin Bantams, Bronze Turkeys and White Pekin Ducks.

Stock at $1.50 to $5.00 per Head; Eggs, $1.00 to $3.00 per Setting

Note my prices. No fancy figures. Ranch-grown fowls. Fine Laying Stock is not bred from Scrubs. Mine are bred for size, color, shape and egg-laying qualities. Write at once for quotations on what you may want. A few Pens, Pairs and Trios. Lots of Males. Cut this ad out and tack it up. You may want to refer to it.

Chamberlain's Perfect Chick Feed

"Nothing Just as Good"

World's Chick Feed of To=Day. The only original **Dry Chick Feed.** All others are worthless imitations. **Chamberlain's Perfect Chick Feed** was used exclusively at the great St. Louis World's Fair during the 7 months. This the highest compliment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.

"Nothing Just as Good"

CHAMBERLAIN'S PERFECT MASH EGG FEED,
THE WORLD'S GREATEST EGG PRODUCER.

GERMAIN SEED CO.,

Pacific Coast Agents. LOS ANGELES, CALA.

SPECIAL PRICES ON TON LOTS.

Distributing Agents: FREDERICK BROWN, San Jose; CHAS. H. NEARPASS, San Diego; CHANNEL COMMERCIAL CO., Santa Barbara and Ventura.

When writing advertisers mention Cultivator.

RHODE ISLAND REDS
Fine large stock, heavy layers, best of broilers. Eggs, $1.50 per setting.
J. O. Setzer, Northrup and Pedro Sts., San Jose, Cal.

Toulouse Geese
75 head of Fine Stock to select from. Write
H. O. Higgins, Box 741, Riverside, Cal.

BARRED ROCKS, WHITE MINORCAS, INDIAN RUNNER DUCKS AND WHITE HOLLAND TURKEYS
Prize winning birds at Central California Fair, where 7 firsts were won in '05.
JOE McDONALD, R. F. D. 2, HANFORD, CAL.

Bronze Brown Turkey Gobblers For Sale
Weigh 25 lbs. at 15 months old. Prices—Gobbler and Hen, $12; Gobbler, $8; Hen, $6.
O. A. REEVE, Gilroy, Cal.

LINDGREN BROS. KINGSBURG, CAL. McPHERSON, KANSAS
BUFF LEGHORNS BARRED ROCKS
Prize-winners at Chicago, St. Louis, San Francisco and majority of prizes at Portland on Buffs. Choice Cockerels and Pullets for sale.

White Rocks Exclusively
Limited number of young birds. Eggs from prize winning, producing strain, $2 per 15 or $5 for special mating. Write for circular.
Mrs. Rhoda E. Durfee, 1110 W. 1st St., Santa Ana, Cal.

Walnut Grove Poultry Ranch
Standard Bred White Wyandottes, (Hay's strain). Eggs for hatching from carefully mated stock, $2 per 13; $12 per 100.
F. L. Hogue - Carpinteria, Cal.

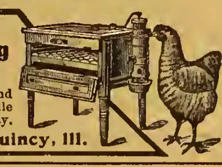
SONOMA-AMERICAN INCUBATOR
Send for large circular fully describing these machines.
Sonoma-American Incubator Co., - Petaluma, Cal.

SQUAB BREEDING
and Fancy Pigeons. Largest stock on the Pacific Coast. Homers in 500 pair lots. Twenty (20) varieties of Fancy Pigeons. Safe shipments any distance.
THE OLIVE PIGEON LOFTS
P. O. Box 1177, Los Angeles, Cal.

BARRED ROCKS
EXCLUSIVELY
Send for 16-page 1905 Catalogue
H. R. CAMPBELL
Box O PETALUMA, CAL.

WILLARD POULTRY FARM
MRS. F. T. HUNGERFORD, MANAGER, HYNES, CAL.
At the last Los Angeles Show our birds won twelve prizes. At the California State Show, Nov. 27th, 1905, on I. R. Ducks, three prizes on four entries. White Minorca and White Wyandotte eggs, $1.50 per 15, $8.00 per 100. Indian Runner Duck eggs, $1.00 per 13, $5.00 per 100.

$12.80 For 200 Egg INCUBATOR
Perfect in construction and action. Hatches every fertile egg. Write for catalog to-day.
GEO. H. STAHL, Quincy, Ill.



WHITE LEGHORN CHICKS, 10 Cts. WHITE PLY. ROCK CHICKS, 12½c.
Both from good stock and in good healthy condition. The W. P. Rock males where I got my eggs are from prize winning stock. Leghorns are selected and have good markings. This is a fine time to start young chicks, after the rain; yards purified, green growth coming and mites and lice at a disadvantage.
Wm. A. Green, Box 401, Anaheim, Cal.

ALBERS' BLACK MINORCAS
Still Lead
—Circular Free—
GEO. R. ALBERS
4849 MARMION WAY
LOS ANGELES, CAL.

Mountain View Poultry Ranch
S. C. White Leghorns—Heavy layers. Eggs, $1.50 per 15, $5.00 per 100.
Indian Runner Ducks—Males for sale. Eggs, $1.00 per 13, $3.00 per 50, $5.00 per 100.
Mrs. J. L. Updyke - Fullerton, Cal.
Successor to Jacob Kreger

LAKENVELDERS
FROM DR. A. H. PHELS, NEW YORK.
Eggs and a few young stock for sale. Also Buff Orpingtons, Brown and White Leghorns.
Ocean View Poultry Ranch
W. R. Shepperd, Prop., R. F. D. No. 1, Arcata, Cal.

try interests of this state would be to have a competent officer of the University who would, in person, answer these calls for aid and instruct the party along the necessary lines. These visits would entail no traveling expenses on the University other than the railroad fare, which doubtless would be nominal as we have every reason to believe that the railroads in California would only too gladly cooperate in any such scheme. The party requesting the aid of such an officer would be asked to furnish his accommodation while in the locality. Similar plans, with reference to dairying have been successfully carried out in Denmark. people being only too glad to take advantage of State aid and the results of visits have exceeded the expectations of the most sanguine. Why should not California do as much for her poultrymen as Denmark does for her buttermakers?

It has already been said in this paper that the purpose of scientfic promotion of the poultry interest is to help both the producer and the consumer, and while it would appear that the main lines of work is along the education of the producer; still there are some prejudices on the part of the consumer which prove the necessity of his further enlightenment in certain directions. One of these is the objection to brown-shelled eggs and therefore it would seem timely to enter a plea for the Plymouth Rock and all fowls laying brown-shelled eggs. If there were any difference in size, in weight, or in nutriment between the brown-shelled and the white shelled eggs there might be some reason why the price in the California market should be a few cents less per dozen for the brown-shelled eggs.

It has been said by some that the brown-shelled eggs are richer than the white-shelled eggs. This statement, however, is not borne out by a searching chemical analysis and the physical examination proves that the main point of superiority, although extremely slight, are possessed by the white-shelled eggs. The minute differences that are found between the two groups are exceeded by variations between the varieties within the same group.

We can therefore state as a conclusion both from a chemical and physical point of view that there are practically no differences, so far as the food value is concerned, between the white-shelled eggs and the brown-shelled eggs.

In conclusion, let me impress upon each of my listeners that he can individually add his share to the promotion of the poultry industry as a whole. What we need most of all is to accumulate full and accurate statistics upon which to base permanent and reliable conclusions. If a large number of the poultrymen would undertake to keep accurate and careful data in regard to the different methods employed in housing, feeding and general management it would be of inestimable value to those who are making scientific investigations. Science and practice must go hand in hand, and by a thorough cooperation between the poultrymen and the agricultural department, and between the poultrymen in the different parts of the State we might hope for a speedy solution of many of the problems now confronting us.—M. E. Jaffa, University of California.

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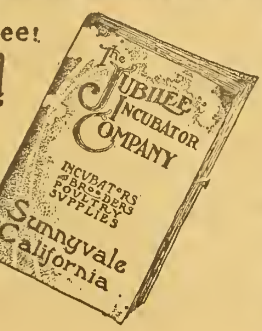
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PETALUMA, CAL., JAN. 1, 1906.

TO WHOM IT MAY CONCERN;

As the chicken raising season is at hand, we beg leave to call your attention to a few of our specialties.

Do you need an Incubator? Our machines are fully guaranteed and have proven themselves unsurpassed wherever used.

Do you need Brooders? We manufacture just what you want; fully guaranteed, made of the finest material and of the best possible workmanship, and, above all, a practical machine which saves the purchaser money, time and labor.

Do you need Poultry Supplies of any kind? We manufacture a line of Supplies the use of which makes Poultry Raising not only profitable, but a pleasure. Among our specialties are:

Our Water Fountains; our Self Feeder for Chicks, our Feed Troughs, large and small; our Lamp Fillers.

Our convenient Must Hatch Nest Boxes; our safe and sure Must Hatch Insecticide, our sanitary Must Hatch Disinfectant, our sure death Must Hatch Lice Exterminator, our Poultry Compound, a fine Spring and Fall Tonic.

In connection with the above list, all of our own manufacture, we can also furnish the following, which are indispensable to the Poultrymen:

The No. 128 Clover Cutter, the Enterprise Bone Mill, the Ohio Feed Cutter, the Banner Root Cutter, the Enterprise Feed Chopper, the Ideal Duplex Feed Mill, and the Farmer's Boiler.

Do you wish to make your own Incubator or Brooder? We can furnish you all the necessary parts for making an Incubator or Brooder, also plans for the best and most practical Poultry Houses.

Did you ever purchase Just Hatched Chicks? We have a Hatchery of 50,000 chicks per month capacity in operation the year round and have, for the past few years. been successfully shipping, in our specially constructed carriers, just hatched Chicks, to distances as great as 2,000 miles. If you need them, book your order early, as our future delivery list is rapidly filling up.

We can also supply White Leghorn hatching egg in quantities desired. If you have not already received our catalogue, write for Catalogue B, and you will find therein a more detailed description with prices, etc., of the above.

Hoping to hear from you in the near future, we are,

Yours Very Respectfully,
MUST HATCH INCUBATOR CO.

The Remarkable Growth of a Big California Industry

From Little Beginnings the Poultry Supply Business of the Coulson Poultry and Stock Food Co. Has Grown to Enormous Proportions.

It was the pleasure of the writer a few days ago to stand on the street of the little city of Petaluma, California, and see the business transacted in the center where the poultry industry has secured its greatest foothold in the United States. The streets were filled with teams of farmers bringing to market the produce of the surrounding ranches, most of which was the fruit of the industry of the prolific White Leghorn hen. Other wagons were equallly as busy taking on their loads of poultry supplies and grains to be hauled to the ranches for the purpose of producing more of the eggs which San Francisco takes, with the best average market of any section of the world.

Standing in front of the store of the Coulson Poultry & Stock Food Co., were several wagons, a couple of which had four horse teams attached, and these were all busy taking on loads of the famous Coulson's poultry foods. We asked Mr. Coulson how many days during the month such a busy scene as that presented itself in front of his store, and he replied that each morning saw great loads start for the large poultry ranches in the surrounding country.

It seemed almost startling, to think of these great loads going out with only poultry foods, until the extent of the business about Petaluma is realized. The poultry business rises to the magnitude of a first-class business venture in Petaluma. Some of these great ranches have as high as 6,000 and even 7,000 laying hens. It is true that there are many "back yard ranches," but the big poultry business predominates. This has been brought about by several conditions and circumstances prevailing at Petaluma. First, the soil conditions and climate are favorable to the best health of the birds. The transportation to the city of San Francisco, one of the world's best markets, is exceedingly low, in fact we are told that the rate is ten cents per crate, with empties returned without charge.

This low transportation, with other conditions mentioned, has given to these poultry growers such advantages that the business has continued to grow, until the business such as Mr. Coulson represents has grown with it until it has great proportions. A faint idea of its magnitude is given by the photograph on this page, wherein the loaded wagons will be observed ready to start, also by the other picture of the partial view of the interior of the manufacturing department. This view is in the basement and the grain, as will be seen at the left of the picture, is received down the chute from the truck and from there it is taken to the millls and mixers which may be seen farther to the right of the picture and in the far background. Thousands of sacks are handled daily, and many tons of meat meal, bone meal and other valuable foods are mixed with the feeds and grains to make up a perfect balanced ration. As to the various ingredients used in these foods, Mr. Coulson tells us that they consist of mill feeds, millet seed, cracked rice, steel cut oats, charred bone, charcoal, meat meal, dried blood, fresh ground bone and various other seeds and foods rich in protein.

These extensive mills and mixing appliances have enabled the most economical handling possible of these foods, and have made possible the manufacture of such large quantities that the sales department of the concern has of necessity been a great factor in keeping the mills busy. This department is quite extensive, and instead of waiting for the customer to come to the store, Mr. Coulson and his assistants have taken their foods to the various ranches, and there demonstrated their actual worth as an egg producing and chick growing food. These agents sometimes travel in automobiles, while others prefer teams.

Regarding this feature of the business, we quote the following, taken from a Petaluma paper of recent date:

"A. R. Coulson and his salesman, J. H. Williams, are just back from a week's trip to western Marin county, having made a big mileage behind Mr. Coulson's new team of spanking grays. They report business brisk and disposed of over fifty tons of Coulson's chicken food during their travels, besides having an excellent time, so they believe the week well spent.

"They visited many poultry farms and Mr. Coulson states that none of the poultry farms out that way have any less than four thousand fowls. Smaller farms are seldom seen. He states that many of the dairy ranches out in that territory are being turned into poultry farms on an elaborate scale.

"At the McDonald ranch of eight acres at Marshall's, there are now five thousand laying hens besides many young fowls. At this ranch he disposed of a fifteen-ton carload of feed, and this is the only lot of the many tons sold by him that will be shipped by train. All of the remainder will be sent out by team and will make work for local teamsters who will do the hauling. So Mr. Coulson's trip was of benefit to others besides himself. There is nothing selfish about Mr. Coulson.

"At the Sartori ranch another carload of feed was sold, and so on throughout the long trip. Messrs. Coulson and Williams returned home on Thursday evening, and on Friday sent three four-horse teams out to Marin county with the first consignment of feed. Next week he will keep the teams busy hauling the remainder."

Regarding these local sales, Mr. Coulson gave us the memorandum of the number made during that particular week, of which the following is a partial list:

A. D. Reynolds, Tomales, 15 tons; Jno. McDonald, Marshalls, 12 tons; M. Sartori, Tomales, 10 tons; Geo. W. Peterson, Petaluma, 3 tons; C. Cerina, Petaluma, 3 tons; Chas. Pozzi, Tomales, 3 tons; W. W. Freeman, Fallon, 3 tons; Wm. Bassett, Tomales, 3 tons; C. Richardson, Tomales, 3 tons; and a number of others who took 1 to 2 tons each.

All told, it is a big business built up from small beginnings, all by putting out goods which have won favor, then pushing with such energy that it had to go. No small factor in Mr. Coulson's success is the free use of printers' ink. There must be no "still hunt" in pushing a new product, no matter how meritorious. People must be informed, then they will take hold.

That's why Coulson's foods sell at the rate of a carload a day.

"Why don't you cultivate the art of oratory?"

"My friend," answered Senator Sorghum, "oratory soothes the gallery to slumber and reads well in the newspaper, but the kind of talk that counts is that which you pour into a man's ear with your hand grasping his coat lapel."—Washington Star.

Queries and Replies

GARDENA DEWBERRIES.

Ed. Cultivator: I want to get some Gardena Dewberry plants. I understand a Mr. Gray of Gardena was the originator of them. Will you kindly send me his address? I see that Rideout of Whittier advertises the Improved Gardena Dewberry. Do you know personally whether his variety is any better than the original.—D. R., Mountain View.

Mr. W. M. Gray is still at Gardena, but does not handle berry plants now. The Improved Gardena Dewberry is an improvement on the original and most of the stock offered for sale is of the improved strain, and not of the old type. We take pleasure however in recommending Mr. Rideout's stock. We believe there is none better.

PAMPAS GRASS.

What are the favorite conditions for Pampas grass? I saw it growing on apparently dry soil near Santa Barbara and it seems to flourish at regular and set intervals along Echo Park lake.—Subscriber, Glendale.

Pampas grass likes a fair amount of moisture, and while young must have it. The idea that it inhabits swamps is erroneous; in its native country (South America) it grows along the banks of mountain streams and not upon the plains. In commerce only the female plant is grown as the male plume is not nearly so handsome. There is a very desirable variety that bears pink plumes and one with variegated foliage, both of which are grown locally. Pampas grass is not a tropical plant, but quite hardy.

CANNING RIPE OLIVES.

Editor Cultivator: Will you answer the following question in your paper? Can ripe olives be prepared and canned at home? If so, how is it done? How are olives pickled?

—H. V. H., Porterville.

The last issue of the Cultivator contains directions for pickling olives. When you make your last brine, place your olives in a wire mesh pail and dip them in the brine while it is boiling. Do not leave the olives in the brine any longer than is necessary to have the boiling liquid come in contact with all of the olives. Place them in the glass jars immediately and pour the boiling brine over them and seal at once. The whole object in view is to kill the germs that cause fermentation which spoils the olives.

INDIGESTION.

A. M. C., a subscriber from Goleta, writes to know what is the matter with his cow. He describes a condition of indigestion. The cough is but a symptom of the stomach trouble. Recent numbers of the Cultivator give remedies for indigestion in the cow and horse. As a preventative to sour stomach powdered charcoal in ounce doses once a day, in feed, will usually effect a cure.

WARBLES.

Editor Cultivator: Will you please tell me through your valuable paper what to do with a cow whose back is full of warbles? and what ought a cow to have, that is in a thin, poor condition, in spite of being well fed.—Mrs. L. F., Sawtelle.

These tumors are produced by the Hypoderma bovis or gadfly. It is advisable to enlarge the opening, which already exists and press out the grub, or turpentine rubbed on the tumor often brings them out.

The second question is difficult to answer. If the cow is well fed, that is on wholesome food, she ought not to be in poor condition. If she continues so the best thing to do is to have her examined by a veterinarian.

PRUNING WICKSON PLUM TREES.

Editor Cultivator: I would like to ask you regarding pruning Wickson plum trees to produce better crops.

I have 200 Wickson trees six years old that have so far produced very little fruit, except in individual cases. Those adjoining a variety orchard containing other kinds of plums have done well the past two years, but odd trees here and there in farther part of orchard have done equally well, so I do not lay it to lack of fertilization of blossoms.

Have been told my pruning is too severe and to do little this season so as to turn wood making tendency to fruiting.

At planting I tapped 16 to 18 inches, and left new growth after pruning each year for five years respectively as follows: eighteen to twenty inches, two feet, one foot, one foot and nine inches.

The trees now have three to five feet of new growth. Trees that have produced heavily for two or three years have had the same pruning as the others.

Your advice will be greatly appreciated.—Rancher, Pasadena.

You do not state if the barren trees blossom freely, but suppose they do not as you bring up the question of light pruning to cheek vigorous wood growth and turn it to fruiting wood. The idea of light pruning for your vigorous growing trees is all right. The feature of certain trees not requiring cross pollination to make them bear has no bearing on the other trees if they do not bloom properly. If they do bloom abundantly enough, the fact that odd trees in isolated places do not require cross pollination does not prove that this will not benefit those which do not bear. The Wickson plum is a very slender grower and a stocky growth is essential in case of heavy bearings, hence it is necessary to do some severe pruning. At the same time we would recommend light pruning of part of the present year's growth. To do this systematically it will be necessary to follow the system used in pruning trelles grape vines. From the description given of the trees, there must be a number of branches of new growth coming from where the last cuts were made. Cut one of these, preferably the strongest shoot, back to 10 inches from the last year's cut and just tip part of the remaining branches and leave the balance untouched. This will give your trees a chance to fruit over practically the entire surface of last summer's growth and at the same time you will not lose control of the form of the tops of the trees. Should more fruit set than your trees can care for, cut back some of the long branches and thin the fruit that remains, to suit yourself. The 10 inch stub which you leave will send up several or at least one good branch which may be used to continue the formation of the tree. Should the long bearing branches appear to make your tree too high or ungainly, cut them back to suit, or remove them entirely. Should this method of pruning prove to give you a satisfactory crop, your new growth from the 10 inch stub will afford you material for repetition of the process.

Should the trees refuse to bear after this treatment, it might pay you to graft a few of them over to some of the native American varieties which we find have a ready sale, the cross pollination scheme would be worked to a good advantage. We would recommend Wayland as sent out by Mr. H. H. Gird of Bonsall, San Diego County. The experiment station at Pomona has a tree of this variety. It never fails and produces a rich, sweet, brilliant red plum that ripens late in October and early in November.

Should you wish one of the good Japanese varieties that will bloom with Wickson and cross pollinate it, graft over a few trees to Sultan. This is an improvement on the Blood or Satsuma plum, being more tender, of better flavor and answering every purpose and a little more, than the Satsuma fulfills.

Remember that one season's trial in anything, whether results are good or bad, does not prove or disprove a theory.

CLIPPING WINGS

Editor Cultivator: Will clipping of wing on hens or roosters affect them deleteriously?—A. M. V., Auburn.

Answer.—No, not if the wings are cut long enough so as not to make them sore.

LIKES THE CULTIVATOR.

R. W. P., writing from Los Gatos, under date of January 3, says: "Permit me to say to the management of the Cultivator, that I like the paper. It is free from unpleasant advertisements which abound in so many journals. It is reliable all through. It is chock full of useful information. I often wonder how so much readable matter is gotten together week after week. Two departments attract me speciallly—the poultry and garden. Then, too, the household is always good. Success to the reliable Cultivator.

ALSO PLEASED.

C. C. C., of Fullerton, under date of January 10, says in a letter to the Cultivator, "I have been pleased from time to time at the splendid improvement made on the Cultivator, and wish for you the success you deserve."

We prize the above very much, for the author is one of the strongest all-around men in Southern California.

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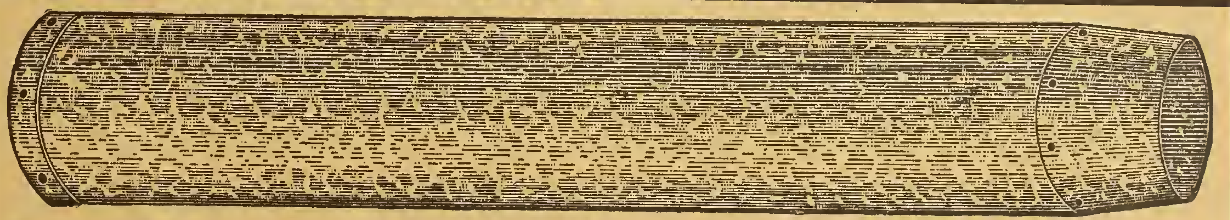

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Household Department

A PIG'S TALE.

Within a pen that was not big
A thrifty farmer kept a pig.
That piggy drank, the neighbors say,
A bucketful of milk each day.

A bucketful—all that was in it—
He drank one day in just a minute,
The man then grabbed him by the tail
And dropped him snug within the pail.

The pail of milk was in the pig
And yet the contents were not big
Enough to fully fill the pail
(The truth is strange but must prevail).

Although the piglet was not big,
And though the pailful filled the pig,
The pigful did not fill the pail
And that's the end of piggy's tale.
—T. C. McConnell, in Philadelphia Press.

Young Atherly's Luck

The morning sun lay warm and clear after the rain of the night before, and young Atherly, as his horse loped easily along the wide range, sang aloud for very joy of light heartedness. Out here, away from cities and crowds how good life seemed.

The train was in, and Atherly hurried around the corner, then halted suddenly, dazzled by the vision which confronted him. On the lower steps of the car near the middle of the train stood a girl, her fair hair blowing in the wind, her hands full of pink roses, For a second neither moved. Then, as a voice from within called "Marion" the girl with a quick flush turned up the steps, and Atherly, stricken with the consciousness of his dusty "chaps" huge spurs and smbrero, slipped back. He had quite forgotten his letter. The engine gave a preliminary snort, the conductor yelled "all aboard!" but Atherly still stood motionless, his eyes fixed on the car wherein she had disappeared. As the slow length of the train began to move the girl slipped back to the platform for a moment, and on the ground, almost at Atherley's feet fell a pink rose. To spring forward, seize the flower, then swing aboard the last car as it passed, was to Atherley but the work of another moment. Before he had fairly realzed that it was he on the train and speeding Eastward as fast as steam could carry him.

Practical thoughts forced a way, and his first act was to take account of his stock.

"Jim will take the horse back," he reasoned. It's all right. Luckily I have just about enough for my ticket to New York." Somehow he had decided that she lived in New York. "And as for meals. Well, who knows what may turn up?" with cheerful optimism.

At the next stop he sneaked forward to the smoking car and sat down to think things over. She was certainly a mighty pretty girl! Atherley feeling for the rose hidden is his breast pocket, concluded that he would probably not regret his action.

"But I've got to get busy on the food question."

There were three or four other men on the car, the younger ones chatting together, and another, rather older, reading in a corner. All eyed him curiously, and Atherley had an inspiration, If he worked them right, amused them, told them queer experiences, they might supply him with food and drink, and as for cigars, well he must husband those he had carefully. In pursuance of this idea he moved nearer, and soon held the group enthralled with his breezy frankness.

"So you really just jumped on the train and came," asked an older man at length, when Billy had grown aweary of his talk and moved away, "and for no other reason than you wanted to see the world?' Atherley laughed rather shamefacedly.

"That's what I told those fellows. But I don't mind telling you the truth. It was—it was on account of a girl," he said, haltingly. The older man's lips twitched.

"A girl! How so?"

"I saw her on the car step," confessed Atherley. "And—and I liked her," he ended lamely, not even to himself did he care to mention the rose. "I wonder if you have seen her? he added eagerly. "She had on some kind of a blue skirt, with a white waist, and carried some roses. They called her "Marion."

The older man started.

"Marion!" he exclaimed, "why, that's my daughter," unthinkingly. Then he stopped, rather annoyed. A young ranchman, no matter how charming and gentlemanly, was hardly a person to be presented to the carefully guarded Marion. But Atherley was too absorbed to notice his hesitation.

"You daughter!" he cried. "Really your daughter, oh, I say, what luck! That will save me an awful lot of time and trouble. I expected the deuce of a job in locating her. Though I knew that I should do it in the end." he added confidently. "Do you mind telling me your name?"

"My name?" divided between indignation and mirth. "I am James Arbuthnot," he declared rather pompously. But Atherley was clearly unimpressed.

"Better and better," he cried; "I always was a lucky chap," joyously. The elder man leaned back and stared at him.

"My dear young man," began he, in his most formal manner, " I think we must understand each other. I certainly fail to see where the luck comes in." Atherley, staring in his turn, became suddenly enlightened.

"Of course. You mean that you don't know me," he cried. "Oh, that's all right," easily. "I've heard dad speak of you hundreds of times. I'm Billy Atherley and I've just been out looking up some properties in the West."

The older man's brow cleared somehow.

"Not William H. Atherley's son?"

Atherley nodded.

"The same. So now won't you introduce me to your daughter?" wistfully. It would save such a lot of time."

Arbuthnot, his gray eyes twinkling, looked at the young fellow quizzically.

"If you are much like your father, and I think you are, you would be hardly apt to wait long for my services," he remarked jocosely. "Come along, then. All I ask of you is please not to get married before we reach New York." The tone strove to be stern but young Atherley laughed happily.

"I make no promises," he declared, with gay defiance. "Oh, here hold on a moment,' as a sudden recollection of his unmailed leter recurred to him. Pulling out the envelope he tore it into fragments, letting the pieces float out of the open window.

"It was to say that I wasn't coming home," he explained. "I will telegraph from Chicago. Now. if you are ready."— A. M. D. Ogden.

TREATMENT OF LAGRIPPE.

We have received some requests of late to outline a treatment of this common malady, and while we cannot go into all the details of how to treat it, a few general principle may be given which will be of great advantage to those who give the disease sufficient attention in its early stages.

Influenza or La Grippe as it is generally designated, affect every part of the body. Sometimes its most marked symptoms are in the respiratory tract, or the digestive organs, and at other times its effects are felt in the nervous system. It is nearly always accompanied with irritation of the respiratory tract, and the importance of early treatment of this disease cannot be overestimated, as when it is left to run its course it nearly always produces chronic changes which leave permanent and harmful results in the system. When the disease is first contracted the whole system is more or less prostrated and a certain amount of fever is present. The patient should at once take a hot bath. The effect of the heat will be to enable the system to rally from the depression which has come over it.

This bath should be taken in a warm room, and the patient should get out of the bath when thoroughly warmed and be wrapped in a hot blanket, with sufficient covering to make him perspire freely for a short time. From this he should get directly into a warm bed, being careful that the surface of the body is in no way chilled by making this change. Absolute and prolonged rest in bed until after all the fever had disappeared and the principal symptoms have been ameliorated, is very essential. The patient should take only a mild liquid diet, drinking plenty of hot water, so as to increase the elimination of the skin and kidneys. If the bowels are not sufficiently free they should be moved by means of large warm enemas. If the catarrhal symptoms are marked they should receive attention. If the throat shows signs of soreness a gargle of camphor water every twenty minutes will usually cure the condition. The nose should be sprayed with a solution containing from three to five grains of menthol to the ounce. If there is a marked soreness of the throat or chest, fomentations over the chest, followed with camphorated oil rubs, will do a great deal of good.—Health.

NEITHER A HOTEL NOR A TENT.

"It is better to wear out than to rust out," says an old saw. It is folly to do either. To rust out is to be an idle observer only as the procession of possibilities rolls past. To wear out is to disregard nature's law and the appeals of common sense, and persistently overtax our strength and exhaust our vital force. You do not have to live in a hotel, neither is it necessary that you should come to the opposite extreme and live under a tree. Be natural. Work at something if it is only a fad. Toiling, as many young men do, in an office for the means of paying the butcher and the baker, there is every temptation to fall into the grind that makes middle-aged men old and old men imbecile and decrepit. Don't do it. Find a way to get exercise out of doors. Don't get lazy under the name of being tired, or bored because disgusted. Keep it up for yourself, and not entirely for other people.

VILLAGE AND RURAL IMPROVEMENT.

Changed conditions have made it almost an imperative business necessity that something be done, and that quickly, to make village and rural life more attractive. For years social economists have voiced their fears that the end of the twentieth century would see all our population living in towns— that men would go to their farms in the morning as to an office, returning to town in the evening. Grave things have been predicted for America's future when this should come to pass.

The usual futility of speculating upon the far distant future is proved in this case. Statisticians tell us that the city-ward tide is about at a standstill, while a marked change in public sentiment towards country living is apparent. Formerly, when a man in a small town acquired a competence by good business habits, he grew restless for larger worlds to conquer, and would remove to a larger town or city. He knew that shrewdness is recognized the world over, and did not fear the competition of the city. He knew, too, that if he did not go, his sons and daughters would, just as fast as they could. He did not blame them. Educated at good schools, with tastes beyond the means of the village to gratify, why should they stay? The consequence has been that the best, most enterprising blood of village life has gone to build up the cities.

The persons who have thus changed their places of residence have gained by removal music, art, libraries, a social intercourse that satifies, and the self-respect which comes from living where life moves in an orderly way. The grass and trees are kept trimmed to a decorous neatness. The parks are gay, the people who throng them are gay, too; their clothes fit and are worn with the air which marks so distinctly the urban from the suburban, and our former villager is very complacent over his escape from the dreary, ill-kept village, where not one dollar could be raised towards improvements for the general good; and property owners would neither keep fences up nor weeds down.

What then, you ask, has brought about the change in sentiment towards country living? There are numerous reasons which partly account for it; chief of which are foreign travel, illustrated books of travel, cheap maga-

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zines, summer visitors, and electric railways, while the bicycle and automobile have done their share in the good work. The annual outpouring of Americans to Europe has been productive of great good in that the returned travelers bring home a wholesome discontent with the dreary villages and bad roads of their country. When we contemplate a trip to England, is it not thoughts of the quaint, well-kept villages of song and story that constitute one of the allurements of the journey? Think you our village and rural life is of a type to attract the people of Europe to visit us? On the contrary, the visitor to our shores has never failed to comment most unpleasantly upon the lack of beauty and cheerfulness in these respects.

NATURE STUDY.

The common country school is still an unsolved problem. We do not need to picture the surroundings of the most of them, but when we know that environment has so much influence in the forming of character and habits of after life it is greatly to be regretted that early school life should not be surrounded with all the appliances necessary to infuse the mind with a love of the beautiful and a knowledge of the useful. The great majority of us now are, and are to be, dependent upon agriculture and its handmaid, horticulture. It follows then, that nature-study, including plant life, fruits and flowers, should be a systematic part of school life. Nature has done her part for us. We have ample grounds, a fertile soil and a climate adapted to a great variety of productions that enables us to rank with any other people educationally. The city schools are working under different conditions, but the kindergarten has been found to be the basis of much of their superior excellence. Some of the teachers of the city schools will claim that there is no room for more studies, that the pupils are now overworked, and no doubt this is true in some schools. The drill is all mental and intellectual, the physical entirely neglected. We are willing to admit that a broad intellect is more capable of grappling with the necessities of active life than a dwarfen one, but nature-study as indicated has a tendency to develop all the facilities, to stimulate habits of thought and of observation, and to round out an otherwise incomplete life.

A BOY WANTED.

Wanted—a boy that is manly,
A boy that is kind and polite,
A boy you can always depend on
To do what he knows to be right.
A boy that is truthful and honest
And faithful and willing to work.
But we have not a place that we care to disgrace
With a boy that is ready to shirk.

Wanted—a boy you can tie to,
A boy that is trusty and true,
A boy that is good to old people
And kind to the little ones too,
A boy that is nice to the home folks
And pleasant to sister and brother,
A boy who will try when things go awry
To be helpful to father and mother.

These are the boys who are wanted
In the workshop, the home and the store;
The world needs such boys in its business,
For them there are places galore.
These are the boys we depend on—
Our hope for the future, and then
Grave problems of state and the world's work await
Such boys when they grow to be men.—Lizzie Clarke Hardy.

Cookery Recipes

PUMPKIN PIE.

Stew pumpkin cut into small pieces in a half pint of water, and when soft mash with potato masher very fine; let the water dry away, watching closely to prevent burning or scorching. For each pie take one well-beaten egg, half cup of sugar, two tablespoons pumpkin, a half pint of rich milk (a little cream will improve it), a little salt; stir well together and season with cinnamon or nutmeg; bake with an under crust only in hot oven. Some people steam pumpkin instead of stewing it.

* * *

TO SERVE WITH MEATS.

Roast beef—grated horseradish.

Roast mutton—Currant jelly.

Boiled mutton—caper sauce.

Roast pork—apple sauce.

Roast lamb—mint sauce.

Venison or wild duck—black currant jelly.

Roast goose—apple sauce.

Roast turkey—oyster sauce.

Roast chicken—bread sauce.

Compote of pigeon—mushroom sauce.

Boiled fresh mackerel—sauce of stewed gooseberries.

Boiled bluefish—with cream sauce.

Boiled shad—rice.

Fresh salmon—green peas with cream sauce.

THE USEFUL ONION.

Onions are a kind of all-around good medicine.

A whole onion eaten at bedtime will by the next morning break the severest cold.

Onions make a good plaster to remove inflamation and hoarseness.

If an onion is smashed so as to secure all the juice in it it will make a most remarkable smelling substance that will quiet the most nervous person.

The strength of it inhaled for a few moments will dull the sense of smell, and weaken the nerves until sleep is produced from sheer exhaustion.

It all comes from one property possessed by the onion, and that is a form of opium.

The following is a summary of the various uses of fruit in relieving diseased conditions of the body. The list is worth keeping. Under the category of laxatives, oranges, figs, tamarinds, prunes, mulberries, dates, nectarines, and plums may be included. Pomegranates, cranberries, blackberries, sumac berries, dewberries, raspberries, barberries, quinces, pears, wild cheries, and medlars are astringent. Grapes, peaches, strawberries, whortleberries, prickly pears, black currants, and melon seeds are diuretics. Gooseberries, red and white currants, pumpkins and melons are refrigerants. Lemons, limes and apples are stomach sedatives.

THE ORIGINAL "RUBBERNECK"

Giraffes are the most difficult of all animals to take by surprise. No matter from what direction you may approach, the giraffe is sure to discover you. It has been called the original "rubberneck." It is not generally known that nature, because of the height of its eyes from the ground, has supplied it with a talent peculiarly it own for making observations.

There is so much bad in the best of us,
And so much good in the worst of us
That it hardly becomes any of us
To talk about the rest of us.
—Credit Lost.

Edges That Last

Probably you have bought edged tools made of steel that was crumbly, or too soft to hold an edge, or so hard as to be brittle. You may have bought them for good tools, too. There is, however, a sure way to get tools with edges that last. It is simply to ask for the Keen Kutter Brand when buying. Keen Kutter Tools have been standard of America for 36 years, and are in every case the best that brains, money and skill can produce. They are made of the finest grades of steel and by the most expert tool makers. As a complete line of tools is sold under this brand, in buying any kind of tool all you need remember is the name

KEEN KUTTER

The draw knife shown here is an example of the excellence of Keen Kutter Tools. It has a nicety of balance and "hang," which has never been successfully imitated, and it is made of the best steel ever put into a draw knife. In all the years that we have sold this tool we have never heard of one defective in any way.

Yet the Keen Kutter Draw Knife is no better than all other Keen Kutter Tools.

The Keen Kutter Line was awarded the Grand Prize at the St. Louis Fair, being the only complete line of tools ever to receive a reward at a great exposition.

Following are some of the various kinds of Keen Kutter Tools: Axes, Adzes, Hammers, Hatchets, Chisels, Screw Drivers, Auger Bits, Files, Planes, Draw Knives, Saws, Tool Cabinets, Scythes, Hay Knives, Grass Hooks, Brush Hooks, Corn Knives, Eye Hoes, Trowels, Pruning Shears, Tinners' Snips, Scissors, Shears, Hair Clippers, Horse Shears, Razors, etc., and Knives of all kinds.

E.C. SIMMONS KEEN KUTTER TRADE ST. LOUIS MO. MARK

If your dealer does not keep Keen Kntter Tools, write us and learn where to get them.

Every Keen Kutter Tool is sold under this Mark and Motto:

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Send for Tool Booklet.

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are good instruments. This fact is proven by their years of continuous service and their constantly growing popularity. They cost a trifle more in the beginning, but repair bills soon make cheaper telephones expensive in comparison. Cheap instruments lose their talking qualities and are an aggravation and a nuisance. We have replaced hundreds of them, where lines were about to be abandoned, with our "Strong 'Phone" — which always retains its strong talking qualities, and they made such lines entirely satisfactory again. Write for FREE book 71-M, "How the Telephone Helps the Farmer." It tells why our telephones are best to buy for farm lines, shows just how they are built, and why they give such lasting satisfaction.

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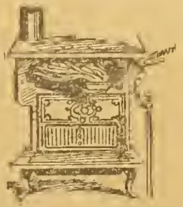

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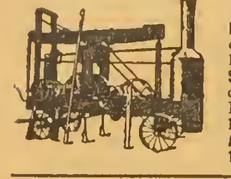
Wanted to Get Even.

"I'd like that tooth, please," said the small boy after the dentist had extracted the torment.

"Certainly, my little man, but why do you want it?" queried the dentist, handing it over.

"Well, sir," responded the gratified boy, "I'm going to take it home and I'm going to stuff it full of sugar. Then I'm going to put it on a plate and," with a triumphant grin, "watch it ache."—New York World.



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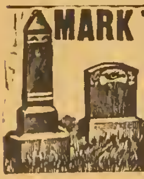

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Los Angeles, Cal.

The Produce Markets

Los Angeles Markets.

Vegetables continue scarce and are quickly taken at high prices.

Butter remains about as last week, while cheese is in heavy receipt and firm as quoted.

Eggs are lower, and, with continued warmer weather, a further decline may be expected, encouraged by heavy shipments from the North.

Butter.

B. of T. Creamery, per roll	.70
Valley Creamery, fancy	.70
Valley Storage	.60

Cheese.

Cal. 3-℔ hand	19½
Cal. Young America	18½
California Anchor	17½
Northern	16@17
Domestic Swiss	19@20
Imported do	26½@27

Eggs.

Eggs, Fresh Ranch	30@31
Eastern and Storage	27@28

Poultry.

Fryers, 2½ lbs	16
Broilers, under 2 lbs., per lb	17
Young Roosters, per lb	16
Hens, per lb	15
Ducks, per ℔	13
Geese	13
Turkeys	19

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock:

Hogs, 200 lbs	6
Prime Steers	4
Cows	3¼
Calves, cwt	4.50
Sheep, ewes, per head	5.00
Lambs, per head	3.25
Wethers	5½

Potatoes.

Northern, per sack	$1.50@1.75
Locals, per cwt	1.10@1.25
Sweets, white, per cwt	1.00
Sweets, yellow, cwt	1.25@1.35
Sweets ,red	90

Vegetables.

Onions, Australian Brown, cwt.	1.50
Onions, yellow, cwt	1.75
Garlic	6@8
Cabbage, per sack	65@1.00
Cauliflower, per doz	25@30
Lettuce, per crate	50
Bell Peppers	10@12
Wax Beans	16@18
String Beans	14@16
Beets	40
Green Onions, doz. bunches	15@25
Carrots, doz. bunches	25@30
Turnips, doz. bunches	30@40
Celery, per doz	50
Peas, per lb	8@9
Egg Plant	12½@18
Chili Peppers, green	3½@4
Tomatoes, local	40@1.00
Parsley, per doz. bunches	40@50
Summer Squash, box 20 lbs	1.25

Citrus Fruits.

Lemons, Standard	1.25@1.35
Lemons, Choice	1.75
Lemons, Fancy	2.00@2.50
Grapefruit	1.75@2.00
Seedless	3.00
Navels	1.25@1.50

Fresh Fruits.

Apples, Bellefleur	1.65@1.75
Fall Pippins	2.50@2.75
Red Pearmain	1.15@1.25
Strawberries, per crate	3.00@4.00
Guavas, per basket	5@6
Persimmons	5@10
Red Emperors, per lb	8@10
Pears, Winter Nellis, per lb	5
Pears, Bartlett	5@7
Pomegranates, 20 lb. box	75
Casaba Melons, large crates	2.25@2.75

Dried Fruit.

Apples, evaporated, ex ch, 10; ch, 9.

Apricots, ex ch, 11; fy, 12; ch, 10½.

Peaches, fy, 12; ch, 10.

Santa Clara Prunes, 30-40, 9c; 40-50, 7½; 50-60, 7c; 60-70, 6½.

Loose Muscatel Raisins, 2-crown 5½; 3-crown, 6; 4-crown, 6½.

Beans, Dried.

Limas	5.00@5.50
Pinks, fancy	2.50@2.65
Lady Washington	3.00@3.10
Small White	3.50@3.75
Black Eyes	5.50@6.00

Nuts.

Walnuts, No. 1, soft shell	14½
Do, No. 2	8@10
Do. No. 1, hard shells	12
Do. No. 2, hard shells	10
Almonds, paper shells,	15@16
Almonds, soft shell	14
Peanuts, California	6@7

Honey.

Honey, comb frames	14@15
White, strained, per lb	6½@7
Amber	5
Beeswax	27

Hay.

Barley	12@16
Alfalfa, local	14@16
Alfalfa, Northern	12.50
Wheat	16
Tame Oat	12@17

Grain.

Selling prices of mill stuffs f. o. b. cars L. A., in quantity, are:

Rolled Barley	1.40
Bran	1.30
Feed Corn Meal	1.55
Shorts	1.45
Wheat, per cwt	1.65@1.70
Cracked Corn	1.50
Oil Cake Meal	2.25
Cocoanut Meal	1.55

A NEW DAIRY SUPPLY FIRM.

The O. J. Weber Company, located at 557 S. Los Angeles street, Los Angeles, is now ready to supply dairy and stockmen with every requisite needed in their line, from a creamery outfit to a test tube. While the firm is a new one, it is so in name and goods only. Mr. Weber has for years been the manager for Wickson & Co., of their Los Angeles branch. He has been very closely indentified with the dairy interests of the southern half of the State we believe the dairymen of this section will give him a very generous patronage as a compliment to his geniality and ability. For many years he has been the secretary of the Creamery Board of Trade as well as occupying the same position in the dairymens' organization, both of these unions have been and are today very strong and their strength is largely due to the work of the secretary.

The Weber Company have located in the heart of the milk distributing business of Los Angeles, and will carry in stock or act as agent for manufacturers of every conceivable appliance needed in the production of milk or butter. Mr. Weber will be pleased to meet old customers as well as new ones and show them his new stock at his new location, 557 S. Los Angeles street, which is within a stones throw of the great Huntington building.

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San Francisco Markets.

San Francisco, Jan. 17, 1906.

Butter.

No important changes concerning either prices for the various grades of butter or the tone of the market were noted yesterday, and general business was restricted mainly to the filling of routine needs.

Fresh California extras	31
Fresh California, firsts	28
Fresh California, seconds	24
Eastern extras	25½
Storage, California, extras	25

Cheese.

California, new	15
California firsts	13½
California seconds	12½
Eastern, Cheddars	15½
Storage, California	13½
Storage, Eastern	15

Eggs.

There was not much interest in Eggs, and prices for Ranch receded one point, while rates for Store descriptions were two points lower. Offerings were liberal, but buying was cautious.

Eggs, fresh ranch	31
Firsts	27
Seconds	25
California Storage	25
Seconds	19

Poultry.

Aside from Fryers and Broilers, which were in light supply and sharp request at the advanced prices, the general market for Chickens was easy, and the demand of a slow jobbing character.

Old Roosters, per doz	4.50@5.00
Young Roosters, per doz	6.00@7.00
Hens, per doz	4.50@6.50
Ducks, per doz	5.00@6.00
Turkeys, per lb	17@19
Geese, per pair	2.00@2.50

Live Stock.

Hogs are in light supply and are very firm at the advance already noted. Cattle are also in keen request and existing conditions continue to favor sellers. Other live stock as previously quoted with a lively trade passing.

Hogs, per lb., 80 to 130 lbs	6
Hogs, per lb., 130 to 250 lbs	6½c
Hogs, per ℔., 250 to 350 ℔s	5½c.
Hogs, per ℔., rough heavy	3½@4½c.
Prime Steers, lb	7½@7¾
Cows, lb	5½@5¾
Calves, ℔	4½@5
Sheep, ewes, per lb	4@4½
Lambs, per head	5.00@5.50
Wethers, per lb	4½@5

Potatoes.

River Burbanks	65@85
Oregon Burbanks	85@1.25
Salinas Burbanks	1.15@1.60
Sweets, Merced	1.15@1.25

Vegetables.

Onions, yellow, per sack	1.25@1.40
Bell Peppers	12½@15
Chili Peppers	6@7
Cucumbers, per doz	75@2.00
Tomatoes, per box	1.25@1.50
String Beans	18
Wax Beans	18
Summer Squash, per box	1.00@1.50
Green Peas, per lb	8@10

Citrus Fruits.

Navels, Fancy	2.25@3.25
Seedlings	75@1.00
Lemons, standard	75@2.50
Limes	6.00@6.50
Grapefruit	1.50@3.50
Tangerines	1.00@1.25

Fresh Fruits.

Yesterday's market for Fruits was barren of any special or important features.

Apples, per box, extra	1.75@2.00
Apples, fancy	$1.25@1.50
Cranberries, per bbl	15@16
Grapes, per box or crate	1.00@1.25
Pears, per box, Winter Nellis	2.00@2.50

Beans, Dried.

Limas	5.00
Pinks	2.00@2.15
Small Whites	3.15@3.25
Black Eyes	4.50@4.75
Bayos	3.50@3.75
Red Kidney	$3.25@3.75
Horse Beans	$1.25@1.85

Hay.

Barley, new	$8.00@11.00
Alfalfa	7.50@12.50
Wheat	11.00@16.50
Oat	7.00@12.50

Grain.

Wheat	$1.33½@1.36¾
Barley	1.22
Corn	1.37½
Oats	1.50@1.65
Rye	1.45@1.52
Rolled Barley, per ton	$26@27.50
Bran, per ton	19.50@20.00
Feed Corn Meal, per ton	29.50@30.50
Middlings ½	26@30
Cracked Corn, per ton	30@31
Oil Cake Meal, per ton	37.00
Cocoanut Cake, per ton	22.00

Hops.

Grades	8@11

CITRUS MARKETS

NEW YORK MARKET.

New York, Jan. 16.—The market continues depressed, and although but 15 cars were sold at auction today prices ruled lower than at yesterday's sale. Taking into consideration the excellent quality of the fruit offered, the prices realized today are the lowest of the season, and with 55 cars remaining on track after today's sale and about 10 cars due, the prospects are not favorable for the realization of better prices for several days.

NAVELS.

	Average.
Freedom, or, Ind. F. Co., Pomona	$1.65
Independent, fy, Highland	1.90
Independent, fy, Highland	1.95
Independent, xf, Highland	2.05
Flower, ch, H. Little, Ontario	1.70
Flower, fy, H. Little, Ontario	1.80
Flower, fy, H. Little, Ontario	1.90
Goldbuckle, xf, S. B. Co., Fr. ex.	1.85
La Mesa, xf, Riverside, ex	2.25
Slover Mountain	1.80
Slover Mountain	2.05
Slover Mountain	2.10
Signal, xf, Stewart Fr. Co	1.90
West Highland, fy, Cleghorn & Co	1.95
West Highland, fy, Cleghorn & Co	2.00
Carnation, xc, Moulton & Greene	2.05

THOMPSON IMPROVED NAVEL.

Mt. Harrison xc, F. L. Sewell	2.10
Mt. Harrison xf, F. L. Sewell	2.20
Orchard, or, Nat. Or. Co., Riverside	2.25

ARIZONA NAVELS.

Whole boxes averaged $4.85; halves averaged $2.50.

LEMONS.

Captain, St., A. H. Fruit Co	$1.65
Palm Tree, ch, A. H. Fruit Co.	1.95
Independent, xc, Highlands	2.00
Independent, fy, Highlands	2.15

Boston Market.

Boston, Jan. 16.—Five cars sold today. The market is steady.

NAVELS.

Palm Tree, ch, A. H. Fruit Co.	$1.90
Squirrel, fy, A. H. Fruit Co	2.05
Independent, ch, Highlands	2.20
Independent, fy, Highlands	2.25
Golden Flower, xf, Redl. O.G.A.	2.40
Rose, xf, Redl. Or. G. A	2.35
Yosemite, fy, CCU, Highlands	2.15
Highlander, xf, CCU, Highlands	2.25
Cactus, xc, CCU, Highlands	2.10

HORTICULTURAL SANITATION

(Continued from First Page)

and state and even from foreign countries, when it is quite possible that better stock could have been purchased at less cost from their local nurseries. They know nothing of the existing conditions of these places, yet they deem it expendient to procure these plants without authorities. They must surely realize what grave chances they are running of intorducing some very dangerous pests or diseases, and should, instead of having a proper inspection, and also fumigation, if there is the least possible cause for suspicion.

How the grower can look upon such treatment as working an injustice to him, and why he should seek to evade such conditions, thus thwarting the work of his protector, for, surely, in our campaign against our fruit tree evils, the quarantine work is the most important, and had greater care and diligence been used years ago, what a cost would have been saved to the grower. Today instead of relaxing in any way our watchfulness, every one connected with the industry should feel it his duty to strengthen the commissions which stand as barriers between the horticultural industries of California and the insect and fungus invaders.

Surely, in no field of activity, do precise methods and clean culture, bring better results to the individual than in horticultural pursuits. If you should ask me how the ideal conditions are to be brought about, I would say, by a concerted universal campaign or careful methods, by which no phase of the industry would be left susceptible to an attack, by either insect or disease, by cleaning up and keeping clean every nook and corner where an insect could pass the winter in comfort, by fumigating every box, sack, basket, or tray used about the orchard, packing-house or dryer.

One hopeful sign is that many of the growers are now washing their boxes with powerful disinfectants wheneve they come into contact with such diseases or fruits as Bitter Rot of Apples, apple or pear scab, etc.

Packing-houses and dryers should be fumigated at the close of each season both for insects and diseases. Prunings from trees should never be dragged through the orchard, but should be destroyed on the spot or hauled to the place where they are to be burned. Why wait for the commissioner to cut out the weeds and thistles? Why allow the country road to remain a stock breeding place for all kinds of noxious weeds? If the roadmaster does not attend to it, clean them out yourself. In short, be not one of those who, instead of having their own interest at heart, instead of having the good of the industry at heart, seem to have only the narrow interest of getting rid of their rubbish, in the quickest and easiest way, regardless of these interests. The great actuating principle with us should be, advance and improve; study and seek continually to get a better and wider knowledge of our business, that we may not only be able to make it a sure and sound financial investment, but, also, a fascinating occupation, and in this way and in this way only, will be enabled to gain and occupy the foremost rank in the horticultural world.

Looking to the future of this great State, we should not count it greatest in cities, in manufacturing or commercial enterprises, or even in its mineral productions, for, as great as all these resources are, they are in no way equal to the capabilities of soil production, but it takes seeing and thinking active and energetic work to make the latter more than equal the former in productive wealth.

A RELIABLE FIRM.

The Johnson & Musser Seed Co., of Los Angeles, have issued their 1906 catalogue and following their custom of previous years, have made it an improvement upon its predecessors. This house is headquarters for field, garden, flower and tree seeds, bulbs, implements, lawn mowers, hose and market gardeners and general ranch supplies in the above lines. Their watchword has always been "Reliable Seeds" and by keeping it ever in mind they have built up an enviable reputation for reliability.

IMMUNITY FROM ROUP.

Many poultry raisers in California are today getting admirable results from the use of a most excellent remedy known as Kileroup. It gives healthy, vigorous fowls with plumage of beautiful luster. It is good for swell-head, canker, chicken-pox and is so effective that we can show many testimonials from many satisfied customers who are our best advertisers. They all say, "I can conscientiously rccommend Kileroup."

A sample can and circulars will be mailed on receipt of 25 cents.

KILEROUP Co.,
442 E. 20th St.,
Los Angeles, California.

NINE OUT OF TEN.

Lordsburg, Cal., Jan. 15, 1906.

California Cultivator: I endorse copy for advertisement. Last year I could not supply the demand for eggs and from three papers that I advertised in I will guarantee that nine out of every ten letters received, mentioned the Cultivator. This year I am better able to take care of the trade.

Yours truly,
T. E. MILLS.

IT'S PENNY WISE

Policy to set out a good tree, costing good money and then let the sun burn the bark, or the rabbits gnaw it when for $1.00 an acre you can get Yucca Tree Protectors that are practically indestructible. Write for free sample of the wrap. Yucca Mfg. Co., 2124 Willow St., Los Angeles.

Waite, Bailey & Lynch, buy, sell, exchange, repair and install gasoline and steam engines, boilers, air compressors, power pumps, etc. Otto gasoline engines, all sizes, to 200-H. P., better built, more economical, therefore superior to all others; prices and terms that will insure due consideration. 943-945 N. Main st., Los Angeles, Calif.

WOMAN'S BREAST AND MAN'S LIP

Most Common Places for Cancer

[San Francisco Examiner]

The papers recently made reference to people cured of cancers without knife or pain by Dr. & Mrs. Dr. Chamley & Co. Since then their cures of many prominent people have occasioned much comment.

These people say their cures were most marvelous, many of them having been given up to die. They first obtained the Doctors' book, the best ever published, teaching that any lump in woman's breast is cancer. It lead, they say, to the greatest blessing of their lives. This instructive book is sent free to those describing their cases.

All the leading newspapers and medical journals of the world have noted the Doctors' wonderful cures. They charge nothing until cured and offer $1000 if they fail. It is said they have cured more cancers than any other physicians living. No X Ray or other swindle. A Pacific Island plant extract makes the cure in the privacy of the patient's own home. Address, 25 Third Street, San Francisco, Cal.

Now Is the Time to Look Over Your Old Plows
Consider them worn out. Come in and see our line of Syracuse Goods, consisting of Syracuse
Disc Plows, Solid Comfort Jr. Sulky,
Solid Comfort Gang, Steel and Wood Beam,
Walking Plows, Steel and Wood Beam Chilled Walking Plows
and the old reliable
Fosmir and Stockton Reversible Gang Plows,
the California Disc Plows, Three Gang and larger,
manufactured by us to stand and do the hardest kind of work
Do not fail to see this plow before buying, also Syracuse Steel Lever Harrows, Spring Tooth Harrows, etc. Have you seen the best Wagon on the market? You have not unless you have cast an eagle eye on the Harrison; and remember the location, which is the important part
L. A. MARTIN & SON 137-143 WILMINGTON ST., formerly Old San Pedro St., LOS ANGELES

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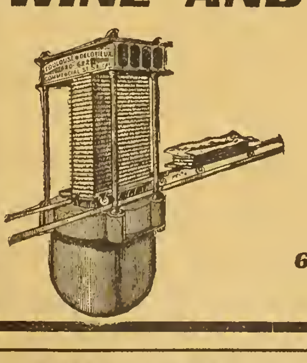

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Presses for All Purposes.
Complete Plants Fitted Out.
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Catalogue Upon Application

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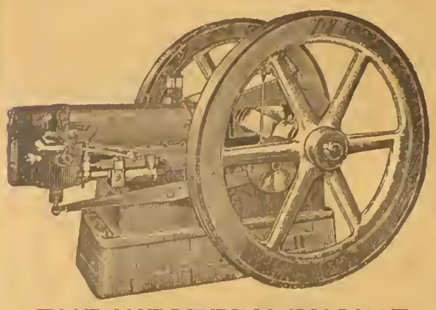
PIONEER ROLL PAPER CO., 219-221 So. Los Angeles St., Los Angeles, Cal.

Write for catalogue
AMES PUMPS ARE STANDARD
A.T. Ames, Galt, Cal.

THE WESTERN GAS ENGINE

"From Factory Direct to User"



Designed and built by Western experts for Western use with Western fuel. In construction the Western embodies many original, yet practical ideas, which place it in advance of any other make on the market today. The simplest, strongest and best engine for

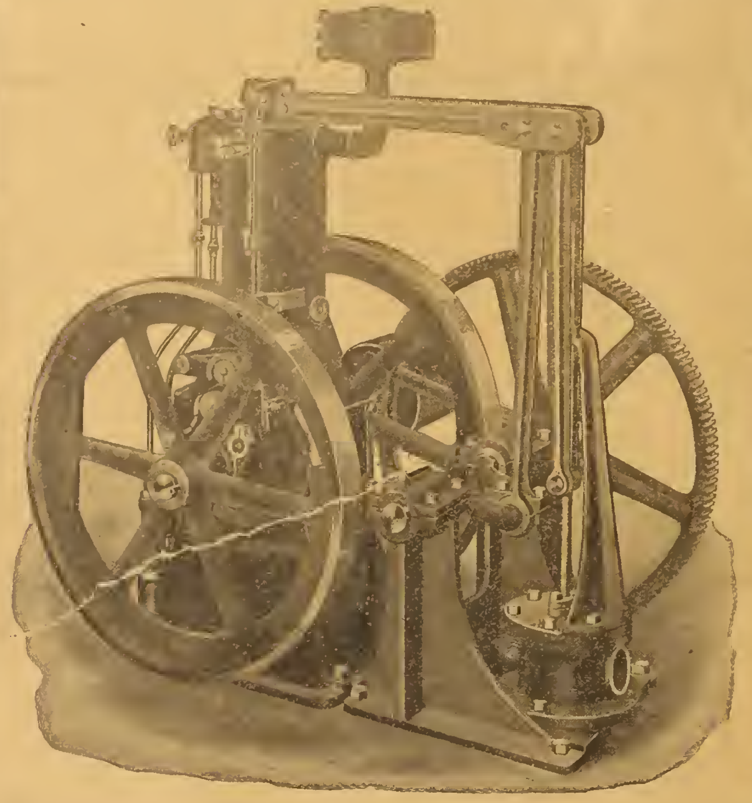
Irrigation, Power and Electric Plants.
Any Size from 5 to 500 H. P.

Burns cheapest fuel—gasoline, distillate or crude oil—with a saving of 20 to 40 per cent over any other style. **Send for Illustrated Catalogue** fully describing every detail of construction; tells **how** and **why** the Western excels all others; it gives the facts—the proof. Learn what Western engines are doing for others. Send your name today—ask for latest issue, A6.

THE WESTERN ENGINE
Maximum Power at Minimum Cost

WESTERN GAS ENGINE CO.
908-932 N. MAIN ST. LOS ANGELES, CAL.

LITTLE WONDER



That's it's name. Little wonder it is that that is its name and that it is so exceedingly popular It's cheap. It's effective. And it's so handy and always ready. Runs the pump, the cutter, the grinder, the churn—any old thing on the ranch. Look it up right away, because you will be interested.

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NATIONAL WOOD PIPE CO.

MADE FROM CALIFORNIA REDWOOD OR SELECTED PUGET SOUND YELLOW FIR **WOOD PIPE** WOODWARD PATENT MACHINE BANDED PIPE WHEELER PATENT CONTINUOUS STAVE PIPE BORED WOOD WATER PIPE

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NO, THIS IS NOT AN ARTESIAN WELL, BUT

AN IRRIGATION PUMPING SYSTEM

SUPPLIED BY

S. J. SMITH MACHINERY CO.

POWER PLANTS, PUMPING MACHINERY AND WATER SUPPLY GOODS

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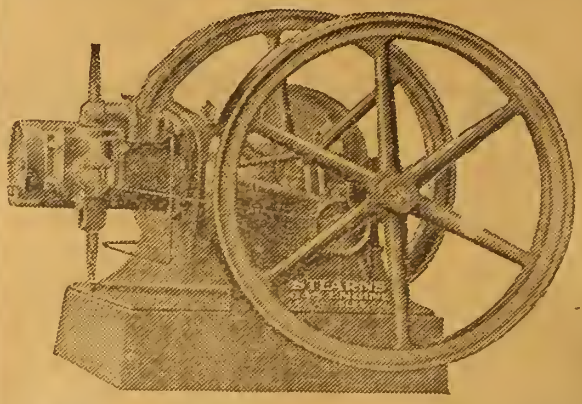
STEARNS GASOLINE OR DISTILLATE ENGINE



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Every One Satisfactory

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Stockton Reversible Gang Plow

EFFECTIVE DURABLE LIGHT OF DRAFT

This is our regular Plow and Land Shifter and Rear Lever. Land Shifter simple and durable. It is in easy reach of operator and there is no danger of wheel running over foot.

Houser & Haines Mfg. Co.
Stockton, Cal.

The New Pomona Pump

We must not attribute all of the success of the Pomona Pumps to the Pump Head or the part of the machinery above the ground, for there is another part just as essential, and this is the cylinder and valves. Our cylinders are made of the best seamless brass tubing made to our order in the East. The valves are made of the best phosphor bronze and are cast and finished complete in our shop.

These valves are of the most improved pattern, have cone-shaped clappers with ground metal seats. There is only one moving part in each valve and we have never had them clogged with sand. The plungers are furnished with three cup leathers, each made from the best oil tanned leather.

With the New Pomona pump-head using a quick return motion and lap in the plungers, these valves have sufficient time to seat before taking up the load of the water column, consequently there is no hammer or jar. The Pomona Pumps are taking the lead for irrigation purposes and are rapidly displacing pumps of inferior design and workmanship.

Send for catalog and estimates for our new plants.

Pomona Mfg. Co.
POMONA, CAL.

When writing to Advertisers Please mention Cultivator

CALIFORNIA CULTIVATOR

DEVOTED TO
AGRICULTURE
IN ALL ITS BRANCHES

Los Angeles **JANUARY 26, 1906** **San Francisco**

A hillside vineyard in Northern California, in a section which last season sent out 14,000,000 gallons of the finest dry wines produced in the State.

Courtesy Cal. N. W. Ry.

Cornfields and orchards in Dry Creek Valley, Sonoma County, a district noted for its diversified interests in all departments of agriculture.

SCENES IN "THE LAND OF CORN AND WINE."

Malthoid Roofing

is made by the original makers of P & B Ready Roofing which they began making in 1884. The same company has been studying the roofing question ever since, and perfection has been reached at last, in Malthoid which is the

Result of 22 years' experience

It is the best ready-to-lay roofing on the market, both in the material that goes into making it and the knowing how to make a roofing which will make a roof weather and water-proof; that will stand heat and cold; resist fire; and make the building it covers warmer in winter and cooler in summer. Any one can lay it. It is the only roofing that meets all cases.

How about your hog house, for example? It pays to have a good warm hog house. Why not cover it over—roof and sides—with MALTHOID? It will be absolutely dry; no wind or snow can go through it. The loss of one hog will cost you more than the cost of the MALTHOID to cover it. How about the poultry house, too? Will it be warm enough in zero weather? No building is too good to be covered with MALTHOID; it is so cheap it can be used on any shed.

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SPECIAL FERTILIZERS MADE TO ORDER

As we produce our own Bone, Blood, Tankage, Sulfuric Acid, and manufacture our own Phosphate, we can sell high grade commercial Fertilizer at low rates.

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Producers, Importers and Dealers in Fertilizing Material of All Kinds. Send for our prices before buying elsewhere, and you will save money

ROOFING
SHEATHING
BOX LINING
TRAY PAPER
for Drying Fruit
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PAPER

MANUFACTURED BY

PIONEER ROLL PAPER CO., 219-221 So. Los Angeles St., Los Angeles, Cal.

COLONIST RATES TO CALIFORNIA

Santa Fe

Will be in effect every day, Feb. 15 to April 7, and Sept. 15 to Oct. 31, 1906, from all points in the east and south.

Following are a few:

Chicago	$33.00	Kansas City & Leovenworth	$25.00
St. Louis	30.00	St. Joseph & Atchison	25.00
Galveston	26.45	Council Bluffs & Omaha	25.00
Dallas, Houston and Fort Worth			25.00
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Colonist rates are also in effect from all points east of Chicago and south of the Ohio river.

Santa Fe Agents in California will take deposits of money to cover price of tickets, which will be promptly furnished to passengers at any point from which these rates are in effect.

California illustrated literature mailed free to any address or may be had from Santa Fe representatives.

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Colonist tickets are honored in tourist sleeping cars which run via the Santa Fe to Los Angeles and San Francisco.

WOODMANSE FREEPORT ILL.

WOODMANSE STEEL WINDMILL

BEST MILL ON EARTH

On account of its removable bearings will pump more water than any mill on earth.

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The Los Angeles Limited

DAILY BETWEEN

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66 HOURS VIA

SALT LAKE ROUTE UNION PACIFIC CHICAGO & NORTHWESTERN

A Solid Through Train consisting of Standard and Tourist Sleepers, Dining Cars, Library-Buffet and Observation Cars, steam heated and electrically lighted throughout.

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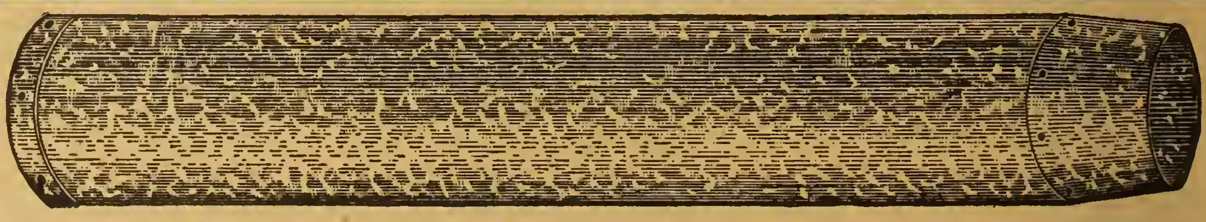
Los Angeles, Cal.



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IF PUMP YOU MUST

Why not pump at a profit? Write A·T·Ames, Galt, Cal. for illustrated Catalogue

CALIFORNIA CULTIVATOR

Vol. XXVI—No. 4 LOS ANGELES, CAL., FRIDAY, JANUARY 26, 1906 Subscription $1 a Year

Agricultural Education in California

Why the Friends of Agricultural Progress Believe That Agriculture Should and Will Be Taught in the Public Schools,

by A. C. True, Director of U. S. Office of Experiment Stations

The movement for the introduction of instruction in agriculture into secondary and primary schools is passing rapidly from the stage of agitation to that of action and realization. The agitation of this subject in this country began in the days when Washington, a great farmer, as well as a great general and statesman, was the foremost man in the new Republic. It has ebbed and flowed many times since then without leaving any lasting impression on our educational system until within the last decade it has gathered such volume and assumed such substantial form that the permanent accomplishment of its object seems assured.

When we inquire why this is so the reasons are many, but they may be grouped under two or three main heads. In general, the claims af agriculture to a place in our public school system are based both on the economic, social and educational needs of agriculture and agricultural people as related to our present civilization, and on the pedagogic requirements of a school system which shall be adapted to the masses of people in a democratic and industrial state, and to the symmetrical culture of the mind and body of the human child. In a word, intelligent farmers and learned pedagogues approaching the subject from their respective standpoints now meet on a common platform, and, each party using the arguments appropriate to his calling, agree that agriculture is a fit and useful subject to be taught in public schools. Hence the friends of agricultural progress in this country have good reasons to believe that ere long agriculture will be generally taught in our schools and for a permanent part of the public school curriculum.

An old argument, which has not altogether lost its force, is that agriculture is a great and fundamental industry. In the United States alone, leaving out the forests, about 850,000,000 acres are devoted to agriculture; there are nearly 6,000,000 farms on which 10,00,000 men work for the direct support of a rural population of 40,000,000 souls. The value of these farms and their equipment is over $20,000,000,000, and the value of their products in 1905 is $6,415,000,000. "The manufacturing industries that depend upon farm products for raw materials employed 2,145,000 persons in 1900, and used a capital of $4,132,000,000."

But the highness and fundamental character of agriculture may be used chiefly to draw attention to the economic, social and educational needs of the agricultural people as a large section of the community using the public schools. Economically speaking, the farmer or horticulturist of today and of the future must be a more intelligent and better informed man than his predecessor in order to compete on advantageous terms with men in other callings and to secure sure and adequate returns for his labor and capital.

Moreover the American farmer needs to learn somewhere that in the age on which we are now entering the co-operative spirit will be more and more essential to the best economic conditions of agriculture, as of other industries. The farmer in this country has thus far been the bulwark of an individualistic organization of industry and of society in general. But we are beginning to see that excessive individualism in industry is resulting in an overweening aristocratic or plutocratic or oligarchic control of industries, and that in some way we must evolve the true co-operative organization of our industries if we are to preserve the democratic character of our social and legal institutions. The farmer boy, studying agriculture with his comrades in the public schools, will more rapidly grasp the idea that community interests are advantageous in agriculture, and we shall thus produce generations of farmers who will work together for the right advancement of their industry.

The unintelligent farmer in every age and land has sunk to the level of a stolid and unprogressive peasantry, and in this way, in spite of the efforts of great statesmen and philanthrophists, the general level of prosperity among farmers has been kept very low.

But in addition to the economic needs of agriculture there are the social needs of agricultural people. In obedience to the general influence of our developing civilization and the peculiar tendencies of farming under irrigation our Western farmers are inevitably being drawn into closer social ties and the currents of their lives are intermingling with those of the communities in which they live in ways which as yet they are loth to recognize and the general results of which they are as a rule innocent or too ignorant to discern.

Meanwhile the other forces of society are more and more banding themselves together to control the ballot box, legislation, social institutions, and the general conduct of affairs. Unless the farmers can be educated that as a mass they will have the co-operative spirit, have some real and vital understanding of community of interest, and know how to mingle to their own advantage with men of other vocation, their lives will forever run in the narrow and monotonous channel and the control of even their own affairs will largely pass into the hands of other men.

But if our agricultural people have great economic and social needs, they also have what may be termed educational needs which are even more important and fundamental. For after all it is the untrained mind of the farmer which holds him down to the dull routine, keeps him in isolation, and condemns him to comparative poverty. And by education, I do not of course mean merely the imparting of information. It is rather the development of the mind, the broadening and clarifying of the mental outlook, the giving of the right turn to the mental processes, the strengthening of the will and of the power to use appropriate means of accomplishing useful ends. The education which the farmer needs is that which will give him some real appreciation of the progressiveness and scientific spirit of the age in which he lives, will arouse a keen interest in the facts and principles of science as related to his own vocation, will show him that in agriculture is an ample opportunity for lifelong studies which may refresh and delight the mind, as well as minister to material success, and in general will lift agricultural practice out of drudgery into the domain of intelligent and hopeful labor.

So the farmer comes with his economic, social and educational needs to the teacher and asks what the schools can do to make him a more successful business man, a better citizen and neighbor, a more intelligent and happy man. And he expects an answer based on an intelligent and sympathetic appreciation of his needs, as well as an up-to-date understanding of the functions of a public school system organized in accordance with reference to the requirements of the masses of youth in a democratic state and ideals of education which however firmly they may be rooted in the general experience of mankind in the past are nevertheless growing and expanding in the light and air of the twentieth century after Christ.

The educator who receives the farmer in this spirit, can, I believe, give an encouraging reply to his appeal. The American public school system was at first developed chiefly in the efforts to overcome illiteracy among the masses. Even when the high schools were established their courses were almost exclusively literary.

As millions of children came to be in the elementary schools and hundreds of thousands in the high schools it became apparent that the old literary curricula and the general atmosphere of school life on the old basis created a distaste for the manual occupations in which the vast majority of all the students in public schools must engage during their after life.

And thus the problem has presented itself to our educators of so changing the public schools as to bring their work into vital relations with the real life and activities of the masses of our

(Continued on Page 95)

Irrigation in Central California—Headwaters of the San Joaquin River.

Deciduous Fruit Culture

GRAFTING AND BUDDING WALNUTS.

Old trees are more economically worked over by grafting than budding as far as is now known. The process is to cut the branches off as is usual with any sort of tree that is to be grafted, leaving the stumps of the branches so distributed as to retain the symmetry of the tree. This can be done at the time of inserting the grafts, which should be in the spring before the new growth starts. The reheading should be so done as to use the smaller branches as much as possible, cutting them off above the main branches or forks. The reason for this is, that small stumps will heal over quicker than large ones. We like the saw graft better than the cleft, as the latter squeezes the scion too much after it is inserted, and young walnut wood being of a soft nature much damage is liable to be done in very large limbs unless the pressure is eased by inserting wedges in the center of the stump. The saw graft enables you to fit the scion into place snugly without undue pressure, and also leave a solid stump. The incision is made by cutting across the corner of the stump, making the long cut down the side and going in on the sawed end just deep enough to admit the full width of the scion. This is then trimmed off with a sharp knife by placing the blade lengthwise with the sawed incision in the bark. Two cuts will fix it, and make the widest part of the notch at the top. If the scion is trimmed to the same angle, it can be fitted snugly by pushing down from the top. If you have much work to do, it would pay to have a machine made which will cut out the notches in the sawed-off branches and trim the ends ofyour scions. Then you would have perfect fit all the time.

The scions should be either two or three years old wood and about four inches long, with at least three buds each. One year old wood is nearly all pith and very soft and very hard to handle. After the scions are all in, apply a coating wax, which is kept warm over a small coal oil stove in a box or old nail keg. After the points of union are all well waxed, take old cotton cloth and tear it in pieces so that they will cover the wax, then paint over the cloth with wax again, waxing down the edges well. The wax is most easily and better applied with a small paint or varnish brush. If this part of the job is well done, there will be no need of going over the work again with wax. When the cloth is not used, the wax will invariably crack along the lines of union, which will tend to reduce the percentage of success. Two inside barks of scion and stock must invariably be matched or the work will be lost, as it is impossible to secure a growth that will make a union unless this is done. When seedlings in the nursery are to be grafted it is very difficult to do this if the scion is placed in the incision so that the barks will be parallel, because the bark at the base of seedling walnuts is considerably thicker than on the top, proper. It is better to incline the scion either in or out a little, which will insure a union at two place which will enable the scion to start when the union will soon extend along the entire length.

When budding seedlings in the nursery or suckers on old trees is to be done, band budding is usually practiced. This is done by cutting out a piece of the bark around the small branch and placing a piece of the same size and containing a bud in its place. When an ordinary budding knife is used, the bark containing the bud should be first taken from the scions of the variety used, lay it over the branch to be budded and mark the size of the bud. The better way, however, is to have a double bladed knife made; this should be made of good steel and the blades should be heavy enough to be rigid, and about two and a half inches apart. With this appliance the ringing of both stock and scion is a simple operation and can be rapidly and accurately done even with the eyes shut. It is necessary that the bark on the scion and stock both should slip easily. This requires that the work must be done during the growing season which is midsummer. The buds should be wrapped with waxed cloth.

Owing to the prevalence of the blight on walnut trees, we think it desirable to disinfect the waxed bands before using. This can be done by dipping them in a solution of bluestone water, and rinsing them thoroughly in pure water before using. The bands should be used dry, of course.

SCALE ON APRICOTS.

Editor Cultivator: Would you kindly advise me as to what would be the best spray for my apricot and walnut trees? They are infested with willow scale and moss—apricot trees also have some black scale. When would be the best time to apply spray?—Subscriber, Arroyo Grande.

Having noted the universal success with the lime, sulphur and salt wash, we may be a little prejudiced in its favor, but there are certain things about it which none of the other bug washes have. It is not only an insecticide, but a fungicide as well. The general effect on the trees is so good that there are two formulas prescribed, one a strong solution when scale is to be fought and a weaker one when it is desired to "brace up" the trees or make clean fruit. It has eventually become customary to add about four pounds of bluestone, which virtually makes a combination Bordeaux and insecticide wash. Trees sprayed during the winter and some months before they bloom are about a week later in blooming. When washes which give a dark color to the trees are used, the blooming period is hastened. After taking all these things into consideration, we have recommended the lime, salt and sulphur wash for scale on the different deciduous trees. While it is more expensive than some other washes, it has a good effect on the trees and no damage can be done through its use, unless used too late in the season. It can be used up to the time when the buds begin to open.

TRANSPLANTING STRAWBERRIES

Editor Cultivator: In the next issue of The Cultivator, if convenient, kindly inform me which is the best way to transfer strawberry plants—to shake all the dirt out of the roots, or to keep as much around them as possible—the plants being close at hand?—I. M. P., Lakeside.

No soil is necessary, as the strawberries are very easy to transplant. Many growers prune the roots to two inches long, and it is best to pull off all the older leaves.

Experiments are being made in Los Angeles which it is hoped will result in establishing a better method for shipping strawberies. A plan now being tried consists of putting the berries in crates which are rendered air tight by the use of heavy paper. It is believed this will result in greatly improving the present conditions. California growers and shippers of strawberries are very anxious to be able to have their berries reach eastern markets in first class condition, as they claim that a very profitable business would result.

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BY PROF. A. J. COOK

AMERICAN HONEY IN EUROPE.

I wish another word on this subject of our developing a market for American honey in Europe. I have now made quite a thorough examination and find almost no honey in the city of Berlin, though I do find not a little American fruit—much dried and some fresh—especially apples and pears. Honey is as easy to ship as the former, much safer to transport than the latter. The honey that I find here is sold in a form that would find no buyers at all in our American markets. It is simply sold in great pieces often of very dark comb, in open dishes, such as we in America used to see thirty or forty years ago, and the price for this is one mark—25 cents per pound. Of course the poor cannot afford to purchase this, and the rich would not be tempted to take it unless honey was specially toothsome. The appearance would surely tempt no one. Our beautiful sections are a real ornament to any table.

It may be that a high tariff would preclude sale of our honey here in Germany. We know, however, that our late president, and the present one, both strongly favored reciprocity, that tariff might not too seriously depress trade. If necessary, we can bring our influence that will secure such legislation as will permit the entre of our honey into the European markets, especially as it could easily be demonstrated that such action would be a blessing to both people and an injury to none.

I see the type made me say in a recent Cultivator what is incorrect as to price. I meant to say: We can afford to sell extracted honey for six cents and comb for ten cents." This could be sold for more than twice this amount in the European markets, with no injury to their home production. It would also help the European bee keeper, as it would spur him up to better work. I am perfectly certain that here is a field worth cultivating, and I sincerly hope our two great organizations will take energetic action in the matter. Transportation by sea is cheap, and safe, and rates could be secured by effort, that would leave a good margin with the producer.

* * *

BEE HIVES IN GERMANY.

It would cause great wonderment were we to see any farmer in a civilized country plowing with the unmodified forked tree, such as our way-back ancestors used to stir the soil. Nor would we see it in Germany, for our German brothers are fully abreast of the times in the matter of plows. Not so, bee hives. In the fine Agricultural Museum in Berlin, is a large exhibit of bee hives, straw and wooden. This exhibit, like all in the building, is supposed to be large and qute complete. Prof. Plate, the able head of the Agriculture Department of the government, told me that the exhibit was a very complete one. It is a matter of great surprise to me that the enterprising Germans, who in most lines of agricultural progress are away to the fore front in both implements and methods of work, in the matter of bee hives are way behind the times. I think most American bee keepers greatly appreciate the valuable services of Rev. L. L. Langstroth who gave us the movable frame bee hive, yet one must look in upon the bee yards of Germany to fully appreciate what he really did for us. The German hives are all tightly closed above. Thus the only way to get into a hive in the case of the oldest unimproved kind is to do as we do with our box hives, turn it up side down and work from the open bottom. These are by far the most common hives in Germany. No respectable or at least no enterprising American bee keeper would use such a hive. Indeed such hives are a menace to the safety of the industry, for in these day of foul brood attack the bee keeper must be able freely, at will to inspect every nook and corner of his hives, that he may see whether or no the insiduous disease lurks in his apiary. In some of the states, I think they legislate against such hives as too dangerous to be tolerated. Many of the oval topped straw hives of Germany are very pretty to look at, and would charm the poet, but they are no longer desirable and our German brothers should not be slow to find this out and act on the knowledge. The improved ? hives of Germany open on the side, or end. and while the combs are in frames, which often hang on a rabet as they do in our own hives, yet they must all be drawn out from the end door, which work must be so awkward and tedious, that I fear manipulation must be avoided in many cases, even when the condition of the bees makes it very desirable to give to the hive a most thorough inspection.. In many hives there are no frames, only the top bar, so that the combs are fastened to the sides of the hives. In this case removal of the combs demands that all be cut loose from the hive at both sides. It is said that the great D'Zierzon became very expert in this cutting, and manipulation. We cannot imagine such hives in the apiaries of our wide awake American bee keepers; indeed in these days of bacterial diseases, such hives are seriously objectionable. It would certainly pay Germany a rich interest on the investment to secure a well equipped model American apiary, and set it up where the German bee keepers could duly inspect the hives and see how superior. is the top-opening hives to the ones now in use. America can teach, not only Germany, but all Europe a whole lot of very interesting and valuable truths regarding hives and the management of bees.

* * *

THE EUROPEAN SPARROW.

I am surprised to find this little finch much less common in Europe it native home, than it is in America. The birds here are very fat and plump, but not very common, or better, not very numerous. Charles Darwin called attention during his lifetime to the fact that introduced species of both animals and plants, are likely, in a favorable environment, to outstrip the related native species. It is a well known truth that our most destructive insect pests are those that have been introduced from the outside It would be interesting to know what handicap keeps this pugnacious little European sparrow from flourishing as it does in its new home in America. I shall talk with Prof Plate and others, in the hopes that I may get light in the matter.

By the way, this little bird has nearly overspread our country.

I think Southern California, and perhaps Arizona alone remain free from its presence. We may fear, yea, expect, that it will soon invade our precincts. It will be interesting to note what its relations to the little red breasted Linnet, when it comes to our Southern California towns and cities. The habits of the two birds are very much alike, and if the sparrow can outdo the Linnet as a mischief maker it may surely claim a record.

* * *

ROAD REPAIRS.

I notice, here in Germany, as in England, that the little mounds of crushed stone are kept close by roads and at very frequent intervals, that there may be no excuse for delay or neglect when a "chuck hole" begins to form. The excellence of the roads everywhere in Europe, is enough to give the country renown, and claim admiration. No country makes a mistake in using any and all hints to make its roads first-class. Good roads always pay big interest on their cost. Let the frequent heaps of gravel dot our American roadsides.

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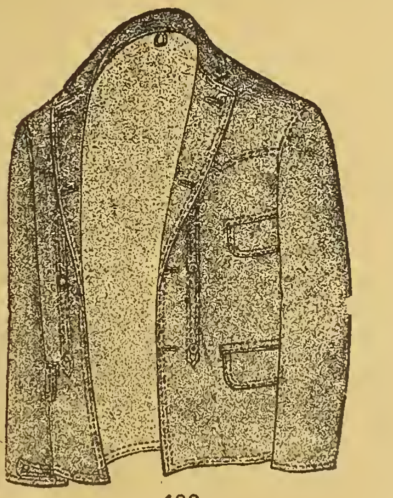

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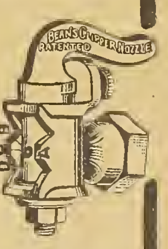

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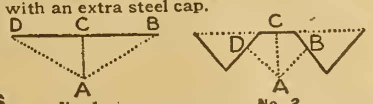

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TREES

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There are a great many sorts of Smyrna Figs. We catalogue six kinds, but these do not comprise our entire collection. There is only one variety, however, which five years production on a commercial scale warrants us in recommending it for drying purposes, and this particular variety we have designated as above to give it the distinction it deserves. When you buy your trees from us, you know you are purchasing stock originating from pedigreed trees, which have been producing the highest grade of fruit for a period of years. When you purchase a thousand peach trees, you usually designate what you want. You certainly would not permit your nurseryman to send you a lot of varieties, without labeling them, if you could help it. Well, it is the same with the Smyrna fig, some are early, others late, some are purple, others green. Can you afford for the sake of saving a few cents to take chances on buying trees, which cannot be relied on. We were the first ones to demonstrate the value of this fig, and with our seal we guarantee the genuineness of our trees. Prices lower than ever before.

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Our stock is grown in Exeter, the famous thermal belt of Tulare County. The soil is a rich, deep, black loam, just the kind which develops the highest grade of fruit, as well as the most perfect type of tree. Our assortment consists of all standard varieties of Oranges, Lemons, Pomelos, Citrons, Limes, etc. Carrying out the lines already established in the other branches, we do not confine ourselves to one or two standards and no more, for although it costs money to keep up a stock of many varieties, we want to be on top in this, as well as in everything we specialize in the nursery business.

GRAPE VINES

If you do not know it, you ought to know that we are the largest growers of vines on the Pacific Coast. We are not only growers of raisin, wine and table grapes, but we are also making a specialty of vines grafted on Phylloxera resistant roots. Our great and enterprising neighbor, Mexico, is having its vineyards devastated by this pest, and we have already sold two orders to prominent vineyardists there, who know what our stock is, consisting of eighty thousand grafted vines. How did we get such orders? Because we had pleaseo our customers before, so they had no hesitation in patronizing us again.

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General Agriculture

SUPPLEMENTING STABLE MANURE.

The maintenance and fertility in farm lands is not possible with the use of only the manures produced on the farm. It has even been found that by the use of manure produced on the farm, and applied at the rate of fifteen tons per acre yearly, the grain yield averaged only twenty-one bushels of wheat, thirty-five bushels of barley, and fifty-four bushels of oats as a result of twelve years continual dressing.

The average farm crop uses plant food in about the proportions of 10 parts of nitrogen to 10 parts of potash and 5 parts of phosphoric acid. As farmyard manure contains for each 10 pounds of nitrogen, about 10 pounds of potash and 5 pounds of phosphoric acid, it would seem that it is a fairly balanced manure for general crops. In fact, this would be the case, but for the fact that much of the nitrogen in general farming is derived from the air through use of legumes, in rotation or otherwise. We must first consider what is meant by a "well balanced" manure or fertilizer. It deals with the law discovered by the eminent agricultural chemist, Justice Von Liebig, that the food of plants consists of three substances, nitrogen, potash, and phosphoric acid; and, that all plants must have these three substances in certain definite proportions, stated above. No excess of any one, or any two for that matter, can enable a crop to grow when there is a shortage of the other one.

Thus plants use certain quantities of each of the elements of plant food; if there is sufficient nitrogen and phosphoric acid for a full crop, but only enough potash for a half crop, a half crop only will grow. Not only this, the excess of nitrogen and phosphoric acid is likely to be lost through drainage, dissipation in the case of nitrogen or change into soluble and unavailable forms in the case of phosphoric acid. Consequently, it is certainly lack of prudence on the part of the farmer to use plant food elements in great excess as compared with another one. These points must be kept in mind in order to understand why even with a liberal use of farmyard manure crop yields will fall off, unless together with the manure be used potash and phosphoric acid.

In a four year rotation of corn, wheat, clover and hay, in order to supply the plant food removed, and in the proper proportion, there will be needed in addition to every 10 tons of farmyard manure used, 41 pounds of potash, and 9 pounds of phosphoric acid, represented by 85 pounds of muriate of potash, or sulphate, or 350 pounds of kainit. In the case of phosphoric acid, about 100 pounds of acid phosphate or bone meal should be added. This, in a few words, explains why farmyard manure is not "well balanced." There is onther reason why fertilizer nitrogen must be conserved as far as possible. It costs twice as much as either potash or phosphoric acid. If all the nitrogen contained in the four year rotation of crops had to be purchased in market, it would cost something like $54.00, or $13.50 per acre, each year, a cost practically prohibitive. Thus not only should we watch the balancing of our manures for fertilizers to prevent clover sickness, but also to save our heavy cost in nitrogen.The figures given above are exact. As a matter of fact, in practice, all plant food applied cannot realize in crops. There is always some loss—another reason why we should watch the proportioning of our plant food more closely.—Geo. Wright.

WHITE MELIOT.

(Melilotus alba.)

As a whole this section of the country grows a large quantity of Sweet Clover, or Melilotus, as we call it. In the first place it was sown on waste places to redeem the land. As a land restorer or enricher it has no equal here. Then the cattlemen began to see and learn its value for pasture. There is no grass or clover here that fattens cattle so fast as Sweet Clover does. A cattle raiser informed me the other day that people had told him that it wasn't Sweet Clover, but Johnson grass, that fattened his cattle. "But," said he, "I noted that my cattle didn't gain so rapidly after the Sweet Clover had gone."

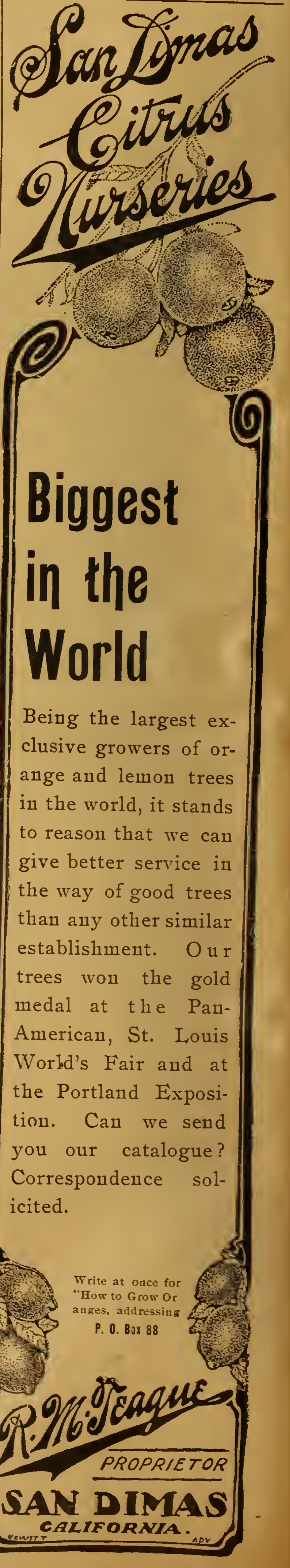
It makes good feed when cut at the proper time, and the stock relish it very much, leaving their other hay to seek out every spear of Sweet Clover, and eating even the coarse stalks.

But right here, in my best judgment, is where the good qualities of Sweet Clover have been overlooked. Sometimes, if not quite often, when stock have not been raised on Sweet Clover they have to learn to like it; but after once learning they never cease to make use of an opportunity to help themselves to the once distasteful stuff. I have known of horses that when first brought to this section wouldn't eat Sweet Clover at all; yet in a short time they had learned to like it so well that, if turned out to graze, you would see them leave all other grasses and seek out a green plot of Sweet Clover, there to feed on their choice of the field.

I can not speak for other sections of our country, for no doubt soil, climate, etc., make a great difference, but here in our lime land Sweet Clover is fully appreciated and much valued as a feed, pasture, and land enricher.—A. B. Brown, Sybil, Ala., in Gleanings in Bee Culture.

CLIMATES FOR TOBACCO.

Climatic conditions have a great influence on the quality and aroma of tobacco, and it is said that the plant is more sensitive to meteorlogical conditions than the instruments used for taking records. In a hot climate the leaf will be gummy and aromatic; in cooler climates the tendency is to thinner leaf, with less aroma. Where, however, the rainfall is heavy in a hot climate with the poor conditions of soil, the leaf is thin, as in Sumatra. Dry weather, from the topping stages of the plant, is favorable to the development of the oxydizing enzyme, which bears such an important part in the curing and fermentation of the leaf. If dry weather during the ripening of the leaf is accompanied with dews at night, the tobacco will be gummy, and cure well. Dry, hot weather causes the leaf to be thick, and tobacco grown in a humid atmosphere, or under cover, will be thin. Very wet, cold weather in the later stages of growth will cause the leaf to be bitter, and cure badly. The deduction therefore is, that tobacco will thrive best in warm climates, with sufficient rainfall to keep the plant growing to the ripening stage. The hot, or cooler climate, together with soil conditions, determines the type of tobacco best suited to each locality.



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SAN DIMAS

CALIFORNIA.

HEWITT ADV

With the Citrus Growers

TRIMMING THE TREES.

Although it is too early for a general pruning of the citrus orchard where it may not have been previously trained up in the way it should go, yet it is a good time to cut off all slender growth that may have been nipped by the frost both on account of looks and for the good of the tree itself. Every twig should be cut off to where the wood shows perfectly sound. It is also as good a time as any while going over the orchard to look into the interior of the trees and remove all dead growth. Many of the smaller twigs that performed a useful function in the growth of the tree have been entirely superseded by a newer and thriftier growth, the result of which is many of the small twigs inside are dead. They are doing no good now in the tree and are harbors for spider webs, dead leaves, dust and other forms of rubbish. They also impede a free circulation of air, which, when dry and hot in the late summer, is unfavorable to the spread of black scale and other forms of parasitical insects. These dead twigs are no indication of an unhealthy condition of the tree, but are natural tq a more advanced stage of tree growth. Their removal will also facilitate spraying, should such an undesirable contingency arise. Time spent now at this leisure time of the year will be very profitably spent, and may even tend to an increased crop of fruit which will have a better chance of early maturity.

WORK IN THE CITRUS ORCHARD.

The rains that have come in liberal quantity of late will relieve the grower of much anxiety, expense and work. The rain has come with a good promise of more and the orange grower can afford to sit down and wait.

Nothing needs to be done in the orchard by way of cultivating or plowing until February, for in the prospect of more rain shortly, cultivation at the present time seems like throwing labor away. Wherever the gropnd is any ways sidling or at right angles to the method used in irrigation it will be a wise precaution to run water furrows to take off any surplus rain that may fall, to prevent washes that may interfere with the grade in irrigation. These should be run often enough so that each furrow will be ample to carry off any surplus that may fall. Those who have been running the subsoiler will have less occasion for this than others who have not. The deep subsoiling presents a much larger surface for seepage than otherwise. Orange picking from now until the end of the season will take up more or less attention as the season advances. The cessation of work in the orchard will give time for this and for any other alterations and improvements that may be desired.

While we have been going on of late years planting out citrus fruits with but little care seemingly as to what it was so long as it was a tree, a change is coming over people's ideas, as it is seen more and more that in the near future only first-class fruit in every particular is likely to bring renumerative prices. Closely akin to the same subject is that of delivering the fruit in first-class condition to the packer and thence on to the consumer. The packing houses are taking up this side of it and cautioning their patrons to be careful in the handling of the fruit, in picking and hauling. This necessity has arisen from the fact of so much damaged fruit having been found on arrival at its Eastern destination. There has, however, been a direct cause that was not suspected at the time and it is probably a near relative to splitting.

It has long been known that the navel orange has always had a tendency to decay at the navel end. Two oranges growing on the same stem side by side, one of them apparently fully ripe and highly colored and the other only partially ripe, present an enigma to the novice why they do not both ripen together? They usually do but in the case under consideration an examination of the fruit would show the highly colored specimen to have a black spot about the base of the navel. This trouble has been greater this year than usual and appears to develop quite rapidly and cause decay in a short time. It will cause the fruit to decay in the packing house for the short time that it stays there. It has been found that the large percentage of decayed on board the cars has been due to this disease. It does not seem to be caused by any fungus but rather by an undue and unequal pressure at a time when the orange is at the most active time of growth, causing a mechanical injury.

When these oranges get in a car of oranges closely packed it will then affect the other oranges in close proximity, and in this way the trouble is increased. In decay there are always present fungus growths which pervade the car affecting all of it by depositing spores on and in the boxes of sound fruit that increases very largely when favoring conditions of heat and moisture are present. Experts can usually tell in packing the affected fruit and throw it among the culls.

Splitting and this rot probably arise from the same cause which is an unequal expansion in the growing fruit which causes this trouble and loss. As to the remedy, none has so far been suggested.

HINTS ON MIXING ARTIFICIAL FERTILIZERS,

Besides a general understanding of the functions of manure, and a knowledge of their differences in action, there is still a necessity for some information as to their handling before sowing.

Nitrate of soda should never be sown at the same time as the seed is sown. On account of its immediate solubility, and the fact that it already is in a form in which plants use it, the nitrogen is liable to quickly leach out of the ground, and be removed in drainage waters. Under these circumstances, nitrate of soda has come to be generally used as a spring top-dressing, at which time there is an abundant root growth, and the nitrogen is made use of rapidly by the growing crop.

Sulphate of ammonia should never be mixed with lime or any manure containing lime, such as Thomas' phosphate or wood ashes. Lime drives off the ammonia, and the quality of the fertilizer is thereby lowered by ignorant handling.

Superphosphates should not have lime in anv form added to them for any purpose, nor should superphosphates and Thomas' phosphates be mixed on account of the lime present in the latter. Bonedust and superphosphate may be mixed without danger. Gypsum may be added to most fertilizers without any way lessening their action, in fact, the addition of gypsum may add materially to the productive power of many fertilizers.

Slowly soluble manures are best sown some time previous to the crop. Lime should always be sown in the early winter, and be harrowed in rather than ploughed in.

Never sow either seed or phosphatic fertilizers within at least a month of sowing lime.

The Southern California Fruit Exchange is doing good work in this market as far as shown on the surface. At any rate no ugly charges and rumors have been circulated regarding it. There may be things going on quite as reprehensible and quite as likely to cause critisim and result in loss to shippers as there are in other directions, but when considering the influences at work in this market or any other it is only possible to point to those which are known and which have resulted in known injury.

There is a splendid market here for all the good fruit California can send. New York wants oranges, plenty of them, but wants them good. It does not want green, immature, wilted and otherwise poor stock. Moreover, it will not buy them, and if they come here every one must expect to lose by them. It isn't a question of supplying the market with fruit. It is a question of supplying the market with good fruit.—New York correspondent Los Angeles Sunday Times.

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Not touched by the frost.
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10 per cent gross on every car is being saved by growers using the new patent Cyclone Car Cooler (Famous Intermittent Vacuum Method). Address today Chas. F. Edson. Manager Citrus Cooling Company, 950 West 20th Street, Los Angeles, Cal.

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Late Valencia and Washington Navels, Lisbon and Eureka Lemons. Guaranteed true to name. No better trees in this State. Lowest market price. Three-year buds, four-year roots. Horticultural Commissioner's certificate. Order early, as good trees are scarce. Inspection invited.
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THE Smith Great Western Endless Apron.

When you load it you know its parts are equal to their duties.
Every Acre Produces A Third More
by a proper top dressing of manure. The Great Western does it evenly, thick or thin, as wanted, and equals 15 men with the fork. Spreads so you get the full manure value—none thrown in chunks or piles to waste. Handles manure in all conditions, and all kinds of fertilizers. Endless Apron, Hood and Endgate, Non-Bunchable Rake, Light Draft, Ball and Socket Bearings, Strength and Durability, are exclusive Great Western features. Sold under strong guarantee. Write to us for catalogue, or call and inspect the spreaders at our store. We have placed some of these spreaders in this vicinity and our customers are very much pleased with them.
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The Ornamental Garden

BY ERNEST BRAUNTON, LOS ANGELES, CAL.

CLIMBING KAISERIN AUGUSTA VICTORIA.

This is the grandest acquisition to the climbing rose family yet produced, and is unquestionably the very best climbing white rose in existence.

We have yet to hear of a single complaint or disappointment regarding it. It originated in Wilmington, Del., and the original plant in a four-inch pot was sold for the sum of $500. A very strong, thrifty grower, free from disease, unusually pretty foliage, and the flowers produced on stout, long stems. Although a Hybrid Tea, it is one of the best bloomers we know of for the entire year and will produce more flowers than many of the Teas or Noisettes. Be it remembered, at the same time, that it is perfectly hardy even for cold sections. The flowers are identical in every way with its parent "Kaisern Augusta Victoria" which is well known by all as the best white ever-blooming bush rose grown. The flowers are exquisitely grand—all of them—perfect in shape, size, substance, fragrance, lasting qualities and fullness of flower; bloom will stay on the plant remaining in perfect condition longer than any rose we know of. In this State during trying hot and dry weather so many of our best roses go to pieces at once when full blown, but not so with "Kaiserin;" it opens up full and broad, petals reflexing and rolling back until it assumes the appearance of a perfect blossom of the Camellia. Words fail to do this grand rose justice; to be appreciated it must be growing and blooming at your home.

BEAUTY SPOTS ON THE FARM.

There are odd corners and waste places on almost every farm, unfit for general cultivation which could be converted at small cost into most delightful and picturesque spots. Of course, all rubbish, such as brush and loose stones should be cleaned off and stones utilized either on this spot or a similar position, in making a rockery mound. Then sow the seeds of some hardy grass—blue grass will do, or any other you like.

Now see that you get plants, shrubs and vines that are suited to the location and the amount of care these spots will get. If the space will allow, by all means have a few shade trees. Some of our wild plants might be used in those places most liable to be neglected; we have plenty of native plants equal to many in cultivation and they will generally stand greater neglect. Place these in out-of-the-way nooks, where they will surprise those who will pass by the place.

Vines can very often be used most efficiently in the beautifying of wild spots. Their twining or pendulous habit of growth renders them free from the stiff appearance which the other plants and trees too often possess when improperly used. For rather extensive places, the more vigorous growing vines should be used to climb over old trees, fences, stonepiles, or unsightly out buildings. The English Ivy is excellent for such purposes, as are the Boston Ivy and Virginia Creeper, though both the latter are deciduous. A variety of shrubs should be used and planted in clumps, with the taller and larger ones in the rear—the lowest down in front. A little thought and work will soon make a great change in the waste places of the farm, and render every foot of soil either useful or beautiful.

HOW TO IRRIGATE A GARDEN.

Two things rule in the garden use of water; quantity and method of application—and they rule jointly; neither can displace the other without reducing desirable effects. The quantity of water must be adequate for deep penetration: the method must be that which carries the water to the roots with the least loss by evaporation and the least puddling of the soil following such application . Obviously the secret of garden irrigation is the use of as much water as the soil can hold without actual saturation and recourse to watering at as long intervals as is possible without its drying out. The daily hosing may be cleanly and refreshing in a dusty locality, and worth the trouble from that point of view, but it is not a satisfactory irrigation to secure thrifty growth of plants. One good soaking a week or a fortnight, according to the hold which the soil has on water and the thirst of the air to remove it, is incomparably better than the frivolous flirting of the hose which most amateurs are apt to indulge in. For this reason the ditch along the bed or border from plant to plant and the freshly made basin around isolated trees and shrubs, with a small stream of water running in the ditch, and the basins filled from the ditch or from the open hose are ways of garden irrigation which should be employed as widely as posible except for the lawn. The true method for the lawn is to allow the hose or revolving sprinkler to stand in one place until the ground is thoroughly soft and wet to a foot or more in depth.—E. J. Wickson in Sunset Magazine.

TREES ON THE FARM.

Why do some farmers live on a place for years without any attempt at beautifying it? Is it necessary that everything you grow should be eaten or sent to market? Many fathers wonder why their boys will not stay on the farm (the girls, too, for that matter), wonder why the good housewife is discontented, looks old beyond her years and seldom smiles. They do not seem to realize that this inexcusable neglect finally becomes a disease which afflicts all the household, and occasionally the neighborhood.

It is this class of ancient settlers who for twenty years have been trying to sell their worn-out fields and go elsewhere because their boys have left the ugly old farm and gone to the penitentiary. Some of the settlers in our own State need a little touching up on these lines of general interest. There is a great opening for improvement work in many of our rural districts. We have too many treeless farms and cheerless dooryards. The appearance of every farm should be inviting, not inhospitable.

The most beautiful forms and effect of landscape decoration produced in growing evergreen trees can best be obtained on the broad acres of the farm, where their symmetrical of a city lot. They should not be set where, on natural development, desirable points of view will be obstructed. Neither should they be planted so that their branches touch each other at any stage of growth, except where a windbreak on the farm is contemplated.

CEDRUS DEODARA TREES
FOR SALE

The undersigned will receive bids until March first, 1906, for two-year-old Cedrus deodara trees, in lots of one hundred or more. Minimum price, $50 00 per hundred, f. o. b. Pasadena, Cal.

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If you are interested in Garden, Field or Flower Seeds of any description, it will pay you to send for our new catalogue. Simply give us your name and the catalogue will be mailed free of cost.

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The Oldest Nursery in Southern California
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In the Vegetable Garden

POTATO SOILS.

Potatoes grow on a wide range of soils, but those in which either sand or clay largely predominate are not desirable. Potatoes prefer a cool, moist, mellow soil, and it must be well drained either naturally or artificially. These conditions can usually be secured in a sandy or gravely loam if rightly managed. There should be enough coarse material in the soil to insure friability and enough silt or clay to insure water holding capacity. An abundant supply of humus is desirable in soils of any grade. It helps to make the stiff soils more permeable and friable and the loose soils more retentive of moisture. In both it is an important source of plant-food, while its presence favors the bringing of the minerals of the soil into available condition.

The physical texture of light soils is favorable for potatoes and if suitably fertilized they will produce larger crops than heavy soils. The potatoes grown on light or medium soils are also usually of superior quality to those grown on heavy soils.

A field having a mellow loamy soil on one part and changing to rather a heavy clay loam on another was planted to potatoes. The whole field was well fertilized and tilled, the different soils being treated alike. It chanced that the first potatoes to be harvested were taken from the area having the lighter soil. These potatoes were furnished to customers who pronounced them of excellent quality and at once placed orders for their winter's supply. These orders were filled with potatoes taken from the area having the heavy soil and proved to be of very inferior quality, to the annoyance and disgust of both seller and buyer.

THE POPULAR TOMATO.

The tomato is one of the few garden vegetables of American origin holding rank as a commercial crop which has come into general cultivation within the last century. This plant because of its relation to the nightshade family, was for a long time held in disrepute by gardeners and people generally.

For at least a century after the tomato was more or less familiar to botanists and gardeners it was very sparingly cultivated, and when grown at all was used chiefly as an ornamental plant. Its cultivation was, therefore, markedly delayed, and it was not until after the strong prejudice that the tomato was poisonous was broken down that its cultivation began to attract attention and its use became general.

The cultivation of the tomato in England and the United States came much later than it did in the countries bordering on the Mediteranean. Climatic conditions undoubtedly had much to do with this. Because of the warm climate and otherwise congenial conditions existing in the Mediterranean countries the tomato flourished there. In England, however, because of the comparatively short season and small amount of heat during the growing period, the cultivation of this plant gained slowly. Even now the cultivation of the tomato in Great Britain is chiefly confined to house and protected walls. In the United States after the plant was once introduced and its poisonous effects were discredited, its cultivation grew rapidly, and now we find it among the most generally cultivated of our garden vegetables.

ONION SEED.

Seed should purchased from reliable firms, even though it may cost more, for it always pays to get good fresh seed. Cheap onion seed is liable to be poor and may mean mixed variety, lack of uniformity in crop, or the production of scullions. Farmers and gardeners frequently buy their seed in the small packets which are sold at the local country stores. This is not a good practice, as such seed is liable to be quite old. Onion seed is slow to germinate and the little plants are delicate and slender-rooted at first. The fresher and more vigorous the seed, the better the germination and the stronger the plants. The germinative vitality of onion seed decreases quite rapidly with age.

THE FARMER'S VEGETABLE GARDEN.

The purpose of the farm garden is to supply the farmer's family with a succession of vegetables throughout the year. It should add diversity to his table and be primarily of use rather than profit. Earliness, productiveness and shipping quality, which are so important in the case of the market gardener, are of less importance with the farmer than suitability to his personal tastes. The farmer should grow the vegetable he likes and should provide these in abundance.

The garden should be located near the house. To be at their best, most vegetables should be used very soon after they are gathered. The garden will be appreciated most if it is not far from the kitchen, not only because the vegetables may be used fresher, but also because the products of the garden will enter more largely into the daily bill of fare, if they are within easy reach.

GARDEN TILLAGE

By the proper cultivation of the garden we accomplish three things: (1) The weeds are kept out so that they do not shade or take away valuable plant food and moisture from the plants which we desire to protect. (2) The surface soil is brought into the best condition to resist drouth; that is, into the best condition for availing itself to the utmost of the stores of water in the subsoil and to prevent evaporation of this water from the surface soil. (3) The stores of insoluble plant food are made soluble by the chemical action and fermentation, which are increased by loosening the soil, thereby letting in the air.

SALT FOR ASPARAGUS.

The application of common salt as a manure was long considered one of the essentials in asparagus growing. With few exceptions the books on gardening written by practical men some years ago recommended the liberal use of salt. The greatest benefit was claimed to be on old plantings.

As to the value of salt for asparagus, opinions differ, not so much in the matter of its value as a direct fertilizer, but in regard to its indirect value. The present trend of opinion seems to be that it is of little if any value, even directly, and by no means necessary.

CAULIFLOWER SEED.

No more important element enters into the success of the cauliflower crop than the quality of the seed and to the seed alone is often due the difference between success and failures, profit and loss. The best seed that can be secured is the cheapest at any reasonable price, and it should always be obtained from a well known reputable seedsman.

The standing of the seedsman is the only guarantee the trucker has that the seed is true to name and selected from the best strain. Aside from the remarks above, the variety does not count for so much as does the care exercised in selecting the seed of that variety. The cauliflower is very prone to deteriorate and unless the most scrupulous care is taken in selecting the seed, the variety will degenerate rapidly.

Cauliflower seed is grown to some extent in America, but most of the seed comes from Denmark, Germany, and Holland and the best from the the first named country (Denmark). An ounce of seed will generally give about fifteen hundred plants suitable for the field. If an ounce of seed will give about fifteen hundred plants and if they are set in the field, 2x3 feet, 7260 plants will be required or between four and five ounces for an acre.

The seed should be purchased some time before required for planting and tested.

First boy—"My papa knows a lot."
Second boy—"How do you know?"
First boy—"'Cause ma told him yesterday he was too smart."—New York Mail.

Cuthbert Raspberry Plants
$1 per 100, $6 per 1000
Gray's Gardena Dewberry
$1.25 per 100, $8 per 1000
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All raised on virgin soil and first-class plants
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STRAWBERRY PLANTS
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The very best Brandywine stock at low prices for sale by the grower,
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BURBANK'S
Crimson Winter Rhubarb
OUR SPECIALTY
$1.50 per dozen, $7.50 per 100, $50 per 1000
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BRANDYWINE "A 1" **STRAWBERRIES**

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Strong Growing, Thrifty Plants for sale. Brandywine Plants direct from Kellogg Strain. The "A 1's" are the newest and best introduction of fall bearing berries known.

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Friday, Jan. 26, 1906

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Better Orange Prices—The New York market shows normal strength again. The bad shipment of oranges spoken of last week has been taken care of and the probability is that no more chances will be taken by interested persons to send forward defective fruit,, so severe was the criticism on the shipment that broke the market two weeks ago. Word come that the demand for oranges is increasing steadily.

The orange is fast taking the place of the apple, which up to within a few years has been the universal fruit. And the more growers and others interested can make them the universal fruit the better it will be for them.

In the market and from push carts, in New York, apples cost quite as much as oranges. Later when the height of the orange season begins, it will be cheaper to buy oranges than apples. There is a good deal 'of argument throughout the East as to which is the better fruit, but he or she who has eaten a fully-ripe California navel and followed it with one of the apples procurable in the city stalls will no longer have a doubt as to the better fruit to buy. His answer will be complete and emphatic, and it will be for the orange.

This is going to be a great year for oranges. Florida fruit is out of the way and the market is clear for the Califorina shipments. All that seems necessary for the California shipper to do is to keep fruit up to the standard, otherwise it will not sell and the shipper will be the loser. A well known commission man who handles only the best of fruit, in all grades, states the matter thus:

"There are some, perhaps, who do not know or care what the fruit is so long as it is an orange, but, happily for all interests concerned, that contingent of consumers daily becoming less numerous. There is now a much larger constituency than ever before which understand what a good orange is and appreciate it when they get it. Of course, this in the product of educative influences which have come about through constant shipments of better and better fruit. When however, some one makes the mistake of shipping poor fruit it creates a bad impression and afterward it takes several days for the market to recover from its injurious influences."

There has never been a time when the outlook was better for the citrus grower than it is at the present time, for the reason that the demand is greater. It has seldom, if ever, been excelled at this season of the year. It is remarkable for the season and when it is considered that the Florida crop has been almost wholly consumed there is reason to congratulate themselves that California is coming forward under such favorable circumstances. It will have the market to itself at the best season of the year, when there is no other fruit that will compare with it and when there will be no other fruit that can offer effective competition.

If the selling interest is made to understand that indifferent fruit can not be hurled on the commisisoners with any success, hereafter, the market will remain firm to the end for the indications of wider distribution are manifested to a greater degree than ever before known. So taking conditions all through there ought to be a widely increased sale for everything that is worthy of sale and there ought to be more and better oranges than ever before to supply this new possibility of sale. If there is they will be taken. If there is not some other variety of fruit will be given preference.

* * *

Growing Oranges in the North—We have been surprised to note the fact that some of the best oranges grown in California, so far as flavor is concerned, are produced north of the Tehachapi. There, too, the citrus crop matures about two weeks earlier than it does in Southern California. In support of ,this statement we have as authority the Tulare Register which notes that a citrus grower, "Mr. Parker Whitney, who has an especially favored locality in Placer country well sheltered from chilling winds, this season has made the first shipment of new fruit in the state, in the middle of October. followed by shipments from Tulare citrus section.

Shipments this year from Northern California continued right up to New Years by which time the crop from Southern California began to be harvested. In this connection we might say there is something peculiar about the Northern California citrus crop that the eastern man finds it difficult to understand and that is that from three hundred to six hundred miles north of Los Angeles, oranges ripen from a month to six weeks earlier than in the south. In the east there is a decline in temperature of about one degree for every degree of longitude so that the north is very much colder than the south. In California this is not so. Our temperature is influenced by the ocean currents and there is little, if any, difference between the northern and southern climate, outside of the mountain section. The greater interior valleys are enclosed on the one side by the Sierra Nevada range and on the other by the coast range, the latter shutting them out from the ocean breezes, and rendering the contrast of temperature in those sections directly opposed to the ocean. In the great orange section of Southern California the valley is swept by cool ocean breezes in the afternoon and there is a sharp contrast between day and night, which has the effect of checking the growth of the fruit and retarding its ripening time.. This is not the case in Northern California and hence the fact of the 'earlier maturity of the orange crop. The Eastern market looks on the Northern California orange as especially of fine flavor and the fact that scale does not infest the to the extent it does in Southern California makes the subject of citrus culture one of much interest to Easterners seeking a location in California with a view to entering the fruit industry.

* * *

Value of Good Roads.—At the possible expense of being called "a good roads crank" the Cultivator desires to call attention to the necessity for some thorough road work in the country at this time. A trip by wagon will impress the observer with the point that in many sections it appears the roads have not been worked for two years. They are full of holes, uneven and abominable. Farmers can not use them to advantage and a buggy is practically out of the question.

It would appear that residents in these districts ought to do something to put the highways in repair. The Supervisors will not help a district which will not help itself and the longer the roads are neglected the worse becomes the situation.

While this topic is in hand attention is called to a recent bulletin from the department of agriculture, in which it is stated that a general improvement of roads in the farming districts would mean an annual saving of $600,000,000 to the owners of the farms. This astounding figure is at least worthy of study by the farmers of California.

The department, under the direction of Secretary Wilson, has been devoting a good deal of study to the question of good country roads, and some of the conclusions which it has reached are of interest. It is estimated that it costs the farmers $960,000,000 a year to move their products to the railway stations. The distances to be traversed vary greatly in different sections. The minimum average is four miles, in New Jersey. In Arizona the average is sixty miles, in Utah thirty-eight miles and in Wyoming forty miles. It is supposed to cost about 25 cents per ton to transport farm products a mile, and it is estimated that two-thirds of the present costs might be saved if good roads were universal.

This immense gain, says the department bulletin, is not to be had at a low rate. There are 2,000,000 miles of roads to be developed, and they would cost from $3000 to $5000 a mile. The average may be in the neighborhood of $3000 a mile, which for the $2,000,000 miles of road means $6,000,000,000. In New Jersey stretches of Telford roads have cost as much as $10,000 a mile, but the cost has been a good deal reduced lately by the use of better machinery and more economical methods. But a road that costs $4000 a mile in New Jersey costs $5000 in Massachusetts, on account of the differences in topographical conditions. In Tennessee some roads have been made with convict labor as low as $225 per mile, but New York paid $4500 per mile for a road with the same sort of labor, which would have cost $9500 with free labor. So it will be observed that there is a wide margin of cost in different sections. In general road making is costlier in the North, owing to the greater severity of frosts and freezes.

In Connecticut the system of state help adopted some years ago has proved very successful. Under it the state provides the engineers and the appliances and pays 66 per cent of the cost, the other 33 being levied against property located in the road district.

In California we have no state law but the legislature of 1905 appropriated $32,000 for the construction of 75 miles of specified country roads. It should have been $100,000, or even more, and the country roads should be the ones to first demand the attention of the authorities. The farmers must help themselves and they can get the legislature to help them if they show a united front in demanding that our State authorities appropriate sufficient funds each year to extend road making over the State.

* * *

Prof. Clarke's Deductions.—The apple growers of Los Angeles and San Bernardino Counties, in session last Saturday were instructed and singularly interested in the address by Prof. Clarke of the University of California, who spoke on "Parasites for Codling Moth."

Widely discussing the moth and its injuries to the apple Prof. Clarke stated that the parasites of the Codling Moth (Ephialtes carbonarious) had done well in breeding jars but as yet had not made demonstrations of their efficacy on orchards. Some time must elapse before this will be satisfactorily made to appear.

Prof. Clarke talked of the use of Paris green for spray showing from a chemical standpoint the cause of its burning trees. He discouraged its use and advocated the use of arsenate of lead in the form of "disperene" which he held may be used without regard to the trees. Two applications are necessary. The first just before closing of the calyx cup of the flower and hte second in twenty-one days thereafter.

An action has been brought in the superior court by the County of Santa Clara vs. the State of California to recover $24,445 alleged to be due the county for the support of aged persons in indigent circumstances.

NEWS OF COUNTRY LIFE IN THE GOLDEN WEST

HORTICULTURE.

The carload shipments for last week were two of lemons and four of hay.—Escondido Times.

Six carloads of oranges were the total shipments from Orange during the week ending Jan. 16.

The peach crop proved to be one of the best ever grown in this country, much to the surprise of many orchardists.

The Alta district raisin association is in a fair way to dissolve. Disagreement between members is the cause.

The Cloverdale Citrus Fair pavilion is to be very greatly enlarged this year to accommodate the exhibition this fall.

W. G. McPherson of Orange was in the valley this week after grape cuttings to replace his vineyard that had been recently destroyed by disease.—Escondido Times.

Another concern incorporated here is the Rosario Vineyard Co., capital $50,000, with the following directors: W. T. Wells, C. Hubert, Los Angeles, and W. P. Lewis, New Mexico.

A Kings County correspondent writes: "The orange crop promises fair. Indications point to good prices, which, growers believe, will overcome the loss caused by the splits. The lemon crop is about medium; prices good."

The Ontario Citrus Fruit Association paid out last week $4,543.33 on the Christmas pool for navel oranges. This is at the rate of $1.68 per 100 pounds, and with the final dividend will net the growers nearly 2 cents per pound for all grades.

Among the recent California fruit incorporations are the Edmonds Peycke Co. of Los Angeles, with a capital stock of $10,000, to deal in fruits. The directors are: E .P. Peycke, Los Angeles; F. E. and H. P. Peycke, Chicago; G. W. Pomy and W. D. Stewart.

We have recently had the pleasure of sampling some very fine apples from Escondido. These apples were grown on the mountains to the north of that thriving burg, and are very like the Julian apple, which has a reputation second to none on the coast on in the East either.—Anaheim Gazette.

The Ontario Record is authority for the statement that during the past week the Upland Citrus Asociation sent $8,000 out to its members. On Christmas pool oranges they paid them on all grades an average of $1.90 per 100 pounds, and on the second November pool an average of $2.00 per 100 pounds.

The Mecca Experimental Station is 200 feet below the sea level and comprises fifteen acres. Several varieties of date palm, grapes and figs are being experimented with, also eucalyptus of which the "red gum" is the best adapted to that climate. A great many more fruit trees will be introduced in the coming spring.

For the fiscal year ending September 1, 1905, 617 lemon trees returned Mr. Fletcher $5.099.21 above packing and marketing charges, or the neat sum of $8.26 per tree. Each acre contains 96 trees, hence $792.96 is the return per acre. The total cost of production was $110 per acre, leaving a net earning per acre of $682.96.—Whittier News.

The Simi Land Company, says the Healdsburg Enterprise, are making large preparations in the way of renewing their vineyards to resistant cuttings and setting out additional acreage. This spring 20 acres will be set out and a nursery of 150,000 resistant cuttings is being prepared for the year following. The company now have close on to four hundred acres in vines.

In the past few seasons Valencia late oranges from the Fullerton-Placcentia belt have sold at fancy prices, some bringing over $10 a box. In the past year L. E. Myers has budded in this section about 10,000 Mediterranean sweet, lemon, Australian and Washington navel trees to late Valencias. The budded trees will begin bearing in two or three years, and fruit men say that by that time there may be as great demand for some other variety.

The Chicago Packer urges its readers among the growers and shippers to begin now to arrange for the consigning or selling of their 1906 crops. It doesn't make any difference, says the Packer, whether the shipping season be early or late, April, May, June, July, August or September, now is the time to begin to get in touch with the trade. Decide during the next two months to whom you will ship and then when the time comes shipments will go out without a hitch.

C. M. Brown, manager of the Redlands Golden Orange Association, states: "In all of his 21 years of experience in the orange business in California he has never seen sizes so small and the evidence to him is conclusive on every hand that there is a remarkable short yield of navels this season. In referring to a recent estimate from another source of 38,000 cars for California Mr. Brown says that such figures could have originated from only one of two sources—the blind or the ignorant. Shipments, Mr. Brown thinks, have without reason been rushed forward entirely too heavy. While about 500 cars more have gone forward than last year, as a matter of fact he thinks that figures should stand from 300 to 400 less."

Some months ago a parasite which kills the purple scale, a deadly foe of orange trees in California, was found in China. Many of its eggs were sent to San Francisco by an agent of the State Horticultural Department of California, but unfortunately the eggs did not hatch. This failure suggested an attempt to bring the parasites to California alive in shape to do business, so a number of orange trees were shipped to China from this State, and upon their arrival they were transported many hundred miles into the interior, to the province that is the home of the enemy of the purple scale. There the parasite made its home in the imported trees, which were then taken back to the sea coast, and after a time placed on a steamer for San Francisco.

They reached that city in good condition after their long journey by sea and land, and are now being watched with constant care. If the parasites on them live and thrive the problem of relief for the Southern California orange groves has been solved. If not a second shipment of trees to China will be made.

AGRICULTURE.

Colorado now has 85,000 acres under beet sugar cultivation, and the value of the production in that State last year amounted to more than $7,000,000.

Receipts of hay in San Francisco for the past week amount to 2,450 tons, or somewhat less than for the previous month.

Thursday, January 25, is the day for the distribution of 11,000 acres of land in Tulare County to members of the California Home Extension Association. Within a week after the drawing it is expected that not less than 1,200 people will have made the trip north and settled in and around the proposed town of Alpaugh.—Tulare Register.

The Hemet News state that F. T. Knewing, the London representative of the Hemet Land Company had arrived with a party of fourteen prospective settlers in the Hemet Valley. This is the third such party that Mr. Knewing has brought out with him. Mr. Knewing further states that a number of others will follow in a short time, who were not quite ready to leave England at the time of his departure.

One day last week forty-eight carloads of vegetables were sent east from Los Angeles. The shipment was worth $15,000. There are in Southern California 3400 acres devoted to the production of the celery crop, The shipments of this vegetable in the month of December brought back to the section the sum $160,000. Shippers send out of Southern California annually something like 500 carloads of cabbage and 300 carloads of cauliflower.

Owing to the rain in Monterey county, work is going on actively to prepare for beet planting. The storm left 1.21 inches of rain making 3.46 for the season. Previous to the rain about 1200 acres of beets had already been planted, but the rain has now put the ground in such condition that what is planted will grow quickly, and planting will now go on fast. This puts an end to the fear that the sugar season will be late this year. The American Beet Sugar Company expects from 16,000 to 18,000 acres of beets this season.

Governor Pardee has written a circular letter to the directors of the State Agricultural Society in which he tells them bluntly that the State Fair must be brought up to a higher standard if any further help is expected from the State treasury. He says that the State Fair is financially flat on its back, that funds are exhausted, and that the indebtedness incurred in fitting up Agricultural Park near Sacramento greatly exceeded the estimates made by the governor and the board, and generally indicates his dissatisfaction with the way in which the State Far has been run. The Governor is right.

LIVE STOCK.

During the year ending October 1, 1905, Tulare County produced 1,735,888 pounds of butter.

The San Jacinto Creamery and ice plant, costing several thousand dollars, burned down this week.

The Imperial Standard says: Joseph Hanson has sold over $800 worth of hogs since Thanksgiving.

The Dinuba Creamery Association filed articles of incorporation Thursday in the office of the county clerk.

Grass and grain are springing up in Napa County with wonderful growth. Stock is already being turned out to pasture.

A man in Chicago boasts of a cow that barks like a dog. It is different from the ordinary Chicago cow which gives milk like a pump.

At Compton, Los Angeles County, is reported to be the largest cheese factory in the world. The output of the institution goes all over the country.

Along the San Gabriel river, stockmen have lost cattle by the recent flood. The water rising so fast at night, that they could not move them to a place of safety.

The dairymen of Alameda County, at least in parts of it, anticipate considerable raise in the price of butter within the next ten days. Milk cows have not been doing well as to volume giving lately.

Inasmuch as all kinds of live stock show higher average prices for this year and there has been so much increase in total volume of receipts, the year's valuation will show an increase of around $$20,000,000 compared with 1904.

Crop prospects in Modoc County, so far as can be determined thus early in the season, are promising. There is plenty of snow, which insures a good range for stock, and gives the farmers ground to hope that crops will be excellent.

The rain which came recently was most welcome to the farmers, and especially to the stock men, as feed was becoming very scarce on the hills. In fact we learn that some of the stock had to be killed on account of the poor condition.—Tulare Press.

Here is an item which shows that the stock business has not gone all to smash throughout the country at large, though at times badly demoralized:

The year's' receipts of horses at Chicago will total close to 127,000 head, which shows that the automobiles have not yet put the horse-raisers out of business. There were 18,448 horses received in March, which smashed the previous record. Hog prices were about 25 cents higher than last year.

MISCELLANEOUS.

Sunnyvale starts the new year with a new bank, a new band, and a new department store.

C. C. Wright, author of the Wright irrigation law and a very able lawyer, died last week in Los Angeles.

The Ontario School district will vote on a proposition to bond the district for $60,000 to build school houses.

Last Thursday afternoon the new Odd Fellows' building in Lemoore, dedicated less than one year ago, was gutted by fire.

The American Produce Co. and L. Coatena & Co., two large fruit and produce houses of San Francisco, have consolidated.

The Courier says Petaluma business men have organized a progressive or commercial club to exploit the advantages of Petaluma as a place for settlers.

The Sonoma County Farmers' Mutual Fire Insurance Co. showed $600,462 insurance in force at the beginning of the year and $354,569 written during the year.

The merchants of Visalia became alarmed at the deluge of rain falling in that town last week and many of the stores had their stocks removed from the basements.

The official count of the votes cast at the bond election held at Santa Ana January 10 shows that instead of carrying the street bond issue of $25,000 lacked 30 votes.

California has five insurance companies among a total of ten doing business in California, with $7,000,000 of insurance in force at an average cost of 20 cents per $100.

Amelia Charlotte Johnson, a native of Sweden, last week at San Jose filed her declaration to become a citizen. She is the first woman in the history of Santa Clara county to apply for citizenship.

A new political party has been organized at Bakersfield called Public Ownership Party. Its slogan is to be "Public ownership and operation of railroads and all other necessary public utilities."

The University of California besides furnishing the youths of the State an education free from charge, is now to go a step further and secure positions for those who graduate from the institution.

Geo. W. Hamrick, an old and well-known resident of Butte County, was found dead this morning on the mountain road near Magalia, that county. He had evidently fallen from his freight wagon.

There is a persistent rumor in university circles about the bay that President Benjamin Ide Wheeler of the University of California is to be Dr. Harper's' successor as head of Chicago University.

Valley Center, Sonoma County, has some of the richest lead and zinc mines in the State. A strong company has been formed and the immediate development of this rich ore will commence at once.

LINERS

WALNUT TREES FOR SALE.—I HAVE 8000 2-year Santa Barbara Soft Shells which I will dispose of at the very lowest price. A. J. HIXSON, Burbank, Cal.

STANDARD-BRED BUFF ORPINGTON Eggs, $2.00 and $3.00. Fertility guaranteed. N. Hayden, Altadena, Cal.

FOR SALE—Two year old MissionOlive Trees three to six feet tall. G. L. Chapman, 3836 Woodlawn Ave., Los Angeles.

FOR SALE—Pumping Plant, No. 6 Ames head capacity 6000 gal. per hour. Six horse Engine Cylinder and piping. This is a genuine snap for somebody. R. H. Jones, Colegrove.

Live Stock and the Dairy

CALF RAISING.

In the dairy herd the calf is removed from the cow's presence after having its toilet made by the rough tongue of the mother and when it has received its first nourishment. This is certainly to be preferred to leaving the cow and calf together for several days. Some of our men have been tender hearted and would take the calf away at once and attend to its needs, as they thought it harder for the cow if she washed and nursed it as her natural love was aroused. However, this may be, it is customary to allow the calf to nurse a few times, though it is easier to handle if the calf is removed and the cow milked a few times by hand and the calf fed three times a day with the new milk. The feeding of the first milk is important, as nature intended it to cleanse and open the intestines of the newly born calf. Indeed without the first milk of the dam to feed it is difficult to raise the young of any kind, where they survive after the death of the dam; they are puny and slow to start growth. The first days after calving the cow should not be milked dry as there is then danger of a chill and milk fever if the udder is permitted to be emptied. When the rush of milk sets in more must be milked out, and by the third day nearly all should be drawn, and as soon as the cow goes back in the herd milk clean.

Gentleness and patience are required in feeding the calf. The calf is left over night without milk, then a shallow pan is used instead of the deep pail. The calf soon drinks when it cannot choke itself as in a deep pail. In the old fashioned way of using a deep pail the calf drew the milk up its nose, greatly to its alarm, and then proceded to blow it out in spray into the feeder's face, who often, in his disgust, laid a far from gentle hand on the calf's head as he again plunged its nose deep in the milk.

* * *

In a registered herd the calf has its ear tag put in before it is removed from the cow box stall. If there are grade cows as well as pure bloods in the herd, it is well to snip off the point of the other ear of all calves dropped by grade cows, then neither by mistake nor malice can the herd be mixed as to grades. In a large herd there will always be some calves dropped when they are not perfect. When they are first separated from the cow examine the heifer as to udder and teats, some will have only two or three teats and others will show the teats grown together. These as well as weak animals should be put in the veal lot, for it never pays to raise weak animals when it costs no more to raise strong ones,

The young calf when removed from its dam must have a warm clean bed in a dry place out of the wind and where it will escape the chill of early morning. After the fifth day the dam's milk has become fit for human use and the calf can be fed from the mixed milk of the herds. It should be fed warm twice a day. After ten days put in skim milk by degrees so that in three weeks it will be receiving all skimmed milk. To restore the fat removed from the skim milk, add oil cake meal jelly. This is made by cooking oil cake meal in a small quantity of water and adding at the rate of four tablespoonfuls to each gallon of the skim milk. The oil meal can be cooked and kept for several days, add a little salt to it in the cooking.

The secret in successfully feeding skim milk to calves is always to remember that it is not poor nor weak food, but has all the nutriment of the new milk except the fat, and in a growing animal this is used to keep the system open or active rather than to make fat. If the skim milk is fed warm it does not seem to matter if it is a little turned. Do not give too much! that is the error that we have had to contend against in our feeding.

The men think skim milk mighty poor feed and load the little calves that have had a gallon of new milk a day with two of skim milk. In a little while the calves have the scours, and usually die. A dose of castor oil, some milk, eggs, and whiskey, an eggnog with salt instead of sugar, (then the calves not the men will get it.) Clean the calves, using a disinfectant as lysol to wash off any filth, put them into a clean house in a clean corral, separating the sick ones from those not as yet attacked.

In the warm skim milk, with the oil cake, use as much Hansen rennet tablet as the given amount of milk would require for cheese, about one quarter of a tablet to each 25 pounds of milk. Feed the milk well warmed every four hours, giving only half rations, some of the calves will have to be drenched, but it pays to do so for I have had them recover which were very far gone. The rennet can be dissolved in a bottle of water and added just as it is needed as it acts promptly in curdling the milk.

Cleanliness in all the vessels and in the skim milk itself is of great importance in calf feeding; they are as sensitive as children. It was said at the University Farmers' Institute at Berkeley last month, that the calves were nearly always infected with tuberculosis from the milk, that indeed if this condition could be eliminated by weeding out tuberculous cows from the herds of the State, the disease would be controlled as far as dairy cattle go.

* * *

A little manger with a mixture of three parts bran, one of oil cake meal, seasoned with salt should be within reach of the calves at all times. When skimmed milk was scarce after the calves are three weeks old it can be stretched with hay tea. This is made by infusing alfalfa or clover hay in water. A clean barrel or wash boiler is filled full of hay and then water is poured on. In the barrel the top is covered and the steam hose put in to bring it to a boil. If the wash kettle is used to put on the stove, let boil five minutes, then set aside, covered, to draw out the strength, use this instead of the milk. Beginning gradually and it can be made to take the place of the skim milk; add the oil cake and do not over-feed. One word of caution to add here is that hay infusions are as good a culture for bacteria as boullion, so that a teaspoonful of fresh lime water to each feed does no harm. I raised calves on hay tea for two winters before the silos were rebuilt, for then the milk supply used to drop down heavily, One time for two months, when oil cake went up in price, I used second grade flour for the gruel with the hay tea, the calves seemed to be as healthy but did not look as slick as when they had the oil meal.

If any difficulties arose I always found carelessness, the pans or pails were not sterile, the gruel was sour, or the calves overfed or the mixture was cold. The average man kills the calves by over-feeding, when a calf's sides are level it has had enough; never feed until it has a bay window on each side.

If the calves are to be dehorned by caustic potash it should be done when they are a week old. This is a job requiring care, as the alkali will burn wherever it falls. The hair is carefully clipped from the little nodule that is to be a horn by and by. The caustic is rubbed on, and the calf is held until the caustic dries, otherwise it will rub it over its head where it is not wanted. A little carbolized vaseline rubbed on the spots every day will help heal the burns.

The calf should soon learn to be tied and where there are any number to be fed a house with small stanchions proves a valuable labor saving and controlling device. The man feeding begins to fill a pail with milk, the calves in the house come up and the one that is first puts his head in the stanchion to reach the milk, is promptly shut in, so he goes along the line and the work is done. The feeder sees the size of the calf and then proportions the feed. The calves lay down patiently and nap after they have finished. As soon as they have forgotten the taste of the milk they are released, and fail to suck each others ears out of shape.

Fresh water at all times should be within reach, and it is surprising how much a calf will drink. As the calves grow older they can be fed only twice a day, though if the grass is not young it pays to continue feeding them until they cease to come to the house at ration time.—Mrs. Minna E. Sherman.

HOG RAISING.

A line of livestock work that is closely allied to dairying is hog raising. The value of swine in our State is about $4,000,000. Of these animals about one-third are raised on dairies. Alfalfa makes a good feed for sows as well as for cows, and there is no better feed for pigs than the dairy by-products. Yet we do not raise enough pork to supply our people. Every year about 10,000,000 pounds of pork products are brought into San Francisco alone. Perhaps not all of this remains in the State, but it doesn't make any difference whether we consume all the products that is brought into the State or whether it is shipped to the Far East. If it is shipped, then we are to blame for not securing that export trade ourselves.—E. W. Majors.

PIGGIE'S DECISION.

Little Piggie, cold and weary,
On a night both dark and dreary,
Crept into a stable that was
Filled with warm, sweet hay;
There he lay through all the night
Till again came broad daylight;
Then he wagged his tail and said:
"I like this place—I'll stay."
—Tim Turnips.

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STERLING MILK COMPANY
INCORPORATED

REGISTERED JERSEYS
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Farms in Los Angeles and Riverside Counties
Young stock for sale at all times.

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DE LAVAL DAIRY SUPPLY CO.
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PERFORMANCES OF NETTIE UNDERWOOD.

Editor Cultivator: Accounts of Nettie's performances at the pail have been published in the Cultivator at different times in the past five or six years, when she has some new demonstration of her dairy ability, and she is well known to many of California's Jersey admirers; but her latest year's test, besides being an official record, is her greatest performance. Nettie dropped her ninth calf December 10th, and started on this official test December 15th, 1904, being at that time ten years and five months of age. The official test shows that for the 365 days ending December 14th, 1905, Nettie gave 10992 pounds of milk which produced 568 pounds of butter fat, equivalent to 668 pounds of butter, 85 per cent. fat. The average daily milk production was 30 pounds. Average daily butter production 1.83 pound. Her highest day's milk yield was 36 pounds, 2 ounces; about two and one-half months after calving. Her lowest day's milk yield was 21 pounds 14 ounces. Her remarkable persistency as a milker will be noted.

She was fed 10 pounds of grain per day during test and all the alfalfa hay she wanted morning and night. Ran on very poor pasture every afternoon from January to May. She had no extra care but ran with the herd at all times. She was not held from breeding to make a large record but was bred May 13th and has carried a calf during the last seven months of her test. She is due to come fresh February 18th. She weighed after finishing the test, 1002 pounds.

The test was conducted under the supervision of Mr. C. S. Burgess, official tester for the American Jersey Cattle Club in Southern California. I have just received a letter from Mr. J. J. Hemingway of New York City, secretary of the American Jersey Cattle Club, saying that Nettie's test has been found correct in every particular, and that it is the third largest yearly authenticated test that has yet been reported to the Club. It is necessary for a mature cow to make 400 pounds of butter fat in a year to be admitted to the Club's Register of Merits. As will be seen Nettie has made 168 pounds more than the required amount. Nettie Underwood is a solid light gray fawn in color. She was dropped July 5th, 1894; was bred by Henry Carlyle, of Orange County, California, of whom I purchased her as a two-year-old. Her sire is Shade's Darling Duke and dam, Virgie Carlyle, who was also a daughter of Shade's Darling Duke. Nettie is very closely inbred in the Coomassie and Pansy families.

Hoping that the above will prove of interest to Cultivator readers, I am yours for "yearly records,"—Guy H. Miller.

BILTMORE'S GOLDEN LAD.

Editor Cultivator: I notice that Mr. C. S. Burgess of Riverside is advertising for sale in your columns, his bull, Biltmore's Golden Lad. As the value of a bull largely depends upon the performance of his daughter I would like to state for the benefit of your readers that we have lately had freshen on our ranch a heifer by Biltmore's Golden Lad out of a daughter of Winksette's Princess. This heifer as far as looks is concerned is a rangy capacious cow with splendid udder and teats and with every mark of a great performer. She has not yet come up to her limit but has already given 30 pounds of milk in a day which with the first calf is not so bad and gives great promise for the future. We are so pleased with the way this heifer is turning out that we have bought a bull calf by Biltmore's Golden Lad out of Winksette's Bell; this cow is now making nearly 2 1-2 pounds of butter a day and we consider her son by Biltmore's Golden Lad good enough to tie up to. I sincerely hope that this bull will fall into the hands of some breeder who has good foundation stock and good methods, as we need just just blood to help build up the reputation of Jerseys in Southern California.—C. W. Leffingwell, Jr.

SILOS IN CALIFORNIA.

The subject of silo-building in California is a growing one among dairymen.

About eight years ago the question of the value of silos began to be agitated. At that time there were very few dairymen in California who knew how to build or fill a silo or had any conception of its value. During one entire year this column of the weekly "Chronicle" was largely devoted to discussion of the silo, the methods of building and filling it and the use of silage in feeding. Now one would no more think of explaining the value of silage than of alfalfa. All intelligent dairymen understand it far better than agricultural editors unless they also happen to be dairymen. Unfortunately many dairymen do not have silos, but if they do not it is usually because they are carrying on business with insufficient capital and so are unable to practice the economics which capital makes possible. In California the profit of dairying depends mainly, assuming the cows to be good, upon maintaining the flow of milk and the health of the animals during that portion of the year when there is no green feed on the ranges. This end can be accomplished only by the use of succulent food and the only sources of succulent food during such periods are soiling and the silo. Both agencies are employed by good dairymen, but of course silage can be had when it is no longer possible to have green corn, sorghum, or any other soiling crop ready to cut. The value of the silo has been very well expressed by Mrs. Minnie E. Sherman, of Fresno, by relating her own experience one year when no silage was provided. She says:

Indian corn can be planted from March to July and mature a good crop. For the past eight years we have put the corn into the silo, excepting one season. That one experience we hope never to be foolish enough to repeat, but we will tell you about it. After selling 150 milk cows and several carload lots of heifers, the milking string was reduced to forty head. The corn sowing was neglected and no silage made for the cows seemed a mere handful to feed. The winter came and it proved cold—the green feed did not come, the hay went short and then came buying of hay and adding oil cake to the ration, still the milk yield dropped down until the cows were only averaging twenty-one pounds daily. Worse than that, they did not look sleek and fat, though they were fed all they should have of the heavy grains. It was the meanest looking lot of cows ever on the ranch. The next spring how the men hustled to put the first crop of alfalfa into the silo for them, and how anxious every one was to see plenty of corn sown. Some of the old hands that had regarded the making of silage with suspicion as to its paying, now became the warmest advocates of the silos. The corn has been planted so faithfully every year since that we have had more than the silos would hold.

DENTITION TEST FOR CATTLE.

At the request of Ohio subscribers we reprint from our issue of Nov. 30, 1904, the dentition test for cattle adopted by the International Live Stock Exposition Co.

The subjoined schedule represents the concensus of opinion of a number who have been consulted in reference to this important subject. It is not put out by the International management as representing absolute accuracy. It is believed that these specifications deal very leniently with feeders; that if the err at all, it is in the direction of giving the feeder the benefit of a doubt.

"Twelve months.—An animal of this age shall have all of its milk (calf) incisor teeth in place.

"Fifteen months.—At this age the center pair of incisor milk teeth may be replaced by center pair of permanent incisors (pinchers), the latter teeth being through the gums but not yet in wear.

"Eighteen month.—The middle pair of permanent incisors at this age should be fully up and in wear, but next pair (first intermediate) not yet cut through gums.

"Twenty-four months.—The mouth at this age will show two middle permanent (broad) incisors fully up and in wear, and next pair (first intermediate) well up but not in wear.

"Thirty months.—The mouth at this age may show six broad permanent incisors, the middle and first intermediate pairs fully up and in wear and the next pair (second intermediate) well up but not in wear.

"Thirty-six months.—Three pairs of broad teeth should be fully up and in wear and the corner milk teeth may be shed or shedding, with the corner permanent teeth just appearing through the gums.

"Thirty-nine months.—Three pairs of broad teeth will be fully up and in wear and corner teeth (incisors) through gums but not in wear."—Breeders' Gazette.

NECESSITIES IN ANIMAL BREEDING.

Our promising stock of Red Polled cattle is widely distributed, one herd here, another there, possibly hundreds of miles between. The herds of milking Shorthorns are scattered around the earth but centered nowhere. How can the breeders of these cattle gain knowledge of one another? How can they measure the breeding power of the parents and different blood lines? The fairs are almost misleading to the breeder of cattle in combining milk and beef. The milk-giving power cannot be measured by the show ring judge, and he must judge on the quality which he sees; hence, he is tempted to select those with good beef outlines, hoping that he may not do injustice to those with superior milking qualities, together with the vitality to transmit both good beefing and milking qualities, together with the tendency to live long and be prolific. An owner of a herd of milking Shorthorns or of Red Polled cattle who is isolated will do well to retain the excellence of his herd unless he has unusual facilities to travel and study the herds from among which he must choose his bulls. Most of such herds have been sooner or later seriously injured as general purpose cattle by the selection of a bull weak in dairy qualities. The herds of these classes of cattle, if they were collected into a few counties, would go forward rapidly to the success which they might merit. And what a blessing it would be to this country fifty years hence if this were now done. Large numbers under similar conditions, where records of prepotency may be kept, compared and used, are necessary in animal breeding. Plans ought to be formulated for the production of a strain of hogs with a very large amount of tender lean meat, abundant fecundity, strong bones, early maturity, large growth from a given amount of food and with sufficient uniformity of color and form to distinguish the breed. All these intrinsic qualities and the facts as to the animal and form should be recorded for future reference.—Prof. W. W. Hays.

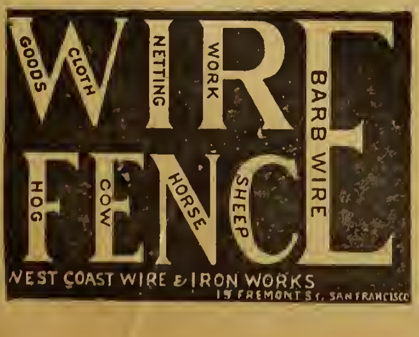
John Lynch Breeder of Registered **Shorthorns**
MILK STRAIN
P. O. Box 321 - Petaluma, Cal.

GEO. C. ROEDING, BREEDER OF HIGH-GRADE
Thoroughbred Holstein Bulls and Heifers
Thoroughbred Berkshire Boars and Sows
FRESNO, CALIFORNIA

Thoroughbred Poland China Swine and **Black Minorca and Barred Rock Poultry**
High grade stock of best strains Young stock for sale. M. BASSETT, HANFORD, CAL.

BERKSHIRE BOARS—ALL AGES
T. WAITE, PERKINS, CAL.

The San Gabriel Valley Herd of
Ohio Poland China Hogs
Won 25 ribbons, 2 Gold and 2 Silver Medals at State Fair at Sacramento, Cal., in 1904. The great imported boars, Chief Guy and Ohio's Chief, at head of herd. Also Black Minorca chicken eggs in season. Stock for sale, also bred sows. W. R. McCASLIN & SON, Walsh Station, Sacramento County, Cal.



Advertising Column for Members
OF THE
JERSEY BREEDERS ASSOCIATION
OF SOUTHERN CALIFORNIA

Organized for the general advancement of Jersey interests, to extend knowledge of their superior merits, for the mutual benefit of members, and to increase the profitableness of one of the State's greatest industries. Breeders are requested to unite with the Association.

BULL FOR SALE
Having sold my ranch I am forced to sell Golden of Biltmore. 60082, a grandson of Golden Lad's. Golden of Biltmore is one of the best, ***if not the best*** sire on the coast. several of his daughters less than two years old selling for over $200 each. Highest bidder for next sixty days takes him. If everything is not just as represented, I will give anyone the ***bull free of charge. I sell on merit.***
C. S. Burgess, Riverside, Cal.

La Palma Stock Farm
Poland-China Swine Jersey Cattle
Send for Catalogue
J. A. CAMPBELL, Buena Park, Cal.

Pure St. Lambert Bull
—ST. LAMBERT OF RAMONA, No. 62633,—
heads the Ramona Herd of Registered Jerseys of
Geo. W. Thomas, Riverside, Cal.

The Whiting Jersey Stock Farm Co.
Have moved their herd of Jerseys from San Bernardino, Cal., to the famous Imperial Valley, and hereafter their post office address will be Heber, San Diego Co., Cal., from which they will conduct all their business. Abundant green feed every day in the year will be of great advantage in the best development of our young stock.
Whiting Jersey Stock Farm Co., Heber, San Diego Co., Cal.

LEMONITA HERD
Leffingwell Rancho, Whittier, Cal.
Service bull "SARGENT FOX," 64833. Bred on the Island of Jersey. Sire, the great Flying Fox, that sold at auction for $7,500. Dam, Miss Sargent, reserve winner over Jersey; winner of seven first prizes and five championship cups. "One of the grandest cows the island has ever produced."

VENADERA HERD
OF REGISTERED JERSEYS
Offers for sale three richly bred heifer calves sired by Marigold's Exile King, out of good cows. Also a yearling son of the great cow Nettie Underwood, official test 10,992 lbs. milk, 668 lbs. butter in one year. For records and prices write
GUY H. MILLER, RIVERSIDE, CAL.

Jersey Mead Stock Farm
HIGH CLASS REGISTERED
JERSEYS, POPULAR
STRAINS
GEO. E. PLATT, 316 E. 8th St., Los Angeles, Cal.

Oakhurst Jerseys
Sons of imported Golden Marquis
out of prize winning and tested dams.
for sale.
L. Bradbury Duarte, Cal.

Kings Victor King of St. Lambert
At head of herd. Young stock for sale.
H. N. WILLIAMS COMPTON, CAL.

Profit in the Poultry Yard

BY MRS. A. BASLEY, HOLLYWOOD, CAL.

BROILERS AND FRYERS.

It would seem as if I have almost covered the ground in our talks on hen raised chicks and brooder chicks but one thing I omitted and that is one of the hardest things for the beginner to do is to follow the advice of the old breeders to kill all the weaklings that are hatched or those that have to be helped out of the shell. They should be killed, because they are weak, and being smaller than the others they cannot hustle for their living and usually grow weakly and sickly and affect the others, so it is bad for the others to allow them to survive. However, if you feel that you must give them a chance, put them under a good motherly hen, feed them dry chick feed, give them milk to drink, lettuce and onions chopped, and if there is any hope of life for them they will live. I have done it and wondered whether it was that the natural heat of the hen helped them, or whether it was because there were only a few together.

When the chicks are about six or eight weeks old, (according to the breed,) if they are to be used as broilers the feeding should be gradually changed, because of the strong large frame, that we want for breeders and layers, we want the food to turn into juicy flesh and fat—and instead of muscle we want meat.

Here again it is the proper food that controls the output, we must feed for what we want. Certain elements in the food go to the growth of bone and muscle, while others go to fat and meat and we must "balance" the ration as they call it according to what we want.

Now if we want broilers, we separate them from the others at about six or eight weeks of age—we have been feeding them up to this time on dry chicks feed and twice a day green feed, with an addition to their supper of eggs and bread crumbs or Johnny cake, we now commence at their suppertime to give them a mash, mixed very dry, composed of equal parts of bran, cornmeal, and oatmeal, mixed dry and crumbly. Let them eat all they will before going to sleep, take away the remainder. Continue giving them the chick feed and green feed during the day, but in about five days give them a breakfast of the above mash,, and five days later give the mash three times a day, mixing it fresh for each meal. The reason for mixing it fresh is that if it is the least sour it will cause trouble, and cost you perhaps the lives of many and certainly cost you much more food labor and money, for you will have to feed a much longer time to get them well again.

I would like to explain that sour milk when fed as clabber, or mixed in the mash does not injure chicks, the acid it contains is lactic acid which does not harm them, but when the mash turns sour it is a fermentation that commences and that invariably injures chickens, although it does not hurt hogs.

The broilers should have some heat at night if the weather is cold, in fact it is not advisable to make any radical change in their quarters nor in the way they are housed. Changes are apt to give them a set back, so be careful to make changes gradually and carefully. Broilers should weigh about a pound and a half, but there are now epicures who demand what is called "squab broilers," or chickens as small as pigeons weighing only one pound, these are either younger chicks or else chicks from smaller breeds like bantams which are very delicious.

Fryers should weigh two pounds, and upwards. Roasters four pounds, and up. It takes just about three weeks to feed the chicks for market with this forcing food. This food given three times a day with green food twice a day and a little chick feed left in the litter to keep them busy and amused is all they need; it will make the flesh juicy and delicious.

In England barley meal and oatmeal, equal parts mixed with milk is the fattening food. In France, buckwheat meal, oatmeal and corn meal. The mixture I recommend is corn meal, oatmeal and bran is the one most available in this part of the co[illegible] and the feed that I have tried [illegible]ccessfully.

I did not have a broiler ranch, but as the chickens usually hatch half males, I would want to discard some of them and I sometimes if I was in a hurry, get them out of the way and so make room for pullets would turn them into broilers or capons. It all depended upon what brooder room or house room I had for the stock. It pays to raise broilers if you have a surplus of males, and if you have a market for them at a fair price. I found it cost just about eighteen cents to raise a broiler weighing a pound and a half from the day it was hatched till it was ready for market. The usual price given by commission houses is 16 cents a pound, so that if I sold a commission house my profits

CHOICE WH. LEGHORN EGGS
For setting now ready.
$1 per setting, $5 per 100.
OVERLOOK RANCH FALLBROOK, CAL.

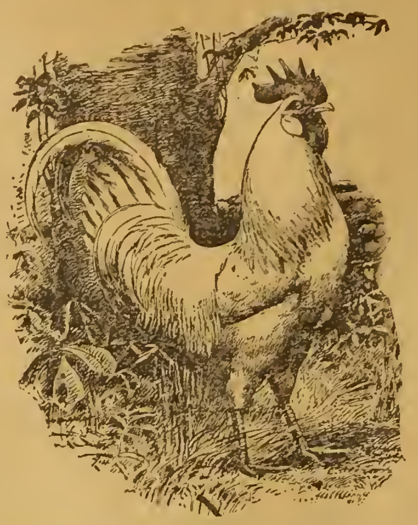
SINGLE COMB WHITE LEGHORNS
Thorough-bred Stock. Eggs, $1.50 per 15
INDIAN RUNNER DUCKS
Eggs, 1.50 per 12,
Send for illustrated catalogue
John P. Boden, 638 Second Street, Watsonville, Cal.

Seven Straight Firsts
3 at Los Angeles, 4 at San Diego
Won by Hannah's White Leghorns
Eggs for Hatching: Utility—$1 per setting, $5 per 100; large birds, heavy layers. Exhibition—$2 per setting, $10 per 100; layers and winners combined.
M. I. Hannahs, Sunnyside, Cal.

Fairview Poultry Yards
W. Plymouth Rocks
. L. Wyandottes .
At the recent Los Angeles show our Wyandottes won 5 ribbons on 5 entries. No Rocks shown. Eggs, $1 and $1.50 per 15, $4.50 to $6 per 100. A few male birds for sale.
A. E. Nelson, El Monte, Cal.

WILLARD POULTRY FARM, HYNES, CAL.
Mrs. F. T. Hungerford, Manager
INDIAN RUNNER DUCKS
At San Francisco show, 1905, I won 2nd and 3rd on young drake and 1st on young duck, with 3 entries. At the 1906 Los Angeles show, 1st on old drake, 1st and 2nd on young drake, 1st and 2nd on young and old duck and 1st on pen. Eggs $1 for 13, $3 for 50, $5 for 100. Hens' eggs all ordered up to April 1st.

Blue Andalusians
Did you see our large display at late show, showing our three distinct strains, Cosh, Morse and Griffith and every ribbon won by Audalusians were on birds from our strain. Our pens are all headed by Blue Ribbon birds from Madison Square Garden, Chicago and Toronto Exposition and our own popular Griffith strain. Eggs for hatching, $2.50 and $3.5 per 14, guaranteed. Also incubator lots from $7.50 to $15.00 100.
MRS. T. R. GRIFFITH
Phone West 841. 3111 Walton Ave. Los Angeles



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S.C. WHITE LEGHORNS
Best Strain, Best Birds.
Greatest Layers. Largest Eggs.
WIN THE BLUE AT THE ST. LOUIS WORLD'S FAIR.
FIRST PRIZE HENS, St. Louis World's Fair; also at Madison Square Garden, New York's Great Show, 1905.
All specials and medals—best hen, best head, pure color.
FIRST PRIZE COCK At Madison Square, New York, 1905, and beating St. Louis World's Fair and Boston winners.
FIRST PRIZE PULLET at Madison Square Garden, New York, 1905, as well as one of the best cockerels in the U. S.; were sired by our famous Rob Roy Jr.
Our patrons report grand success with pullets from our stock; 26 eggs per month, 56 eggs in 64 days, 18 eggs in 19 days; eggs that weigh 2½ to 3 ounces.
229 eggs already this season.
Improve your flock with one of our large, beautiful White Cockerels.
Birds and eggs for setting. Price list mailed on application.
THE W. W. HOWARD CO.
(State Vice-President National S. C. White Leghorn Club)
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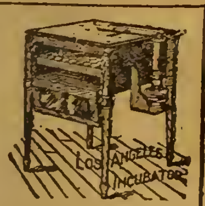

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Complete with Instructions, $2.50, Postpaid
STOCKMEN'S SUPPLY CO.
FRESNO, CALIFORNIA

PER 2 BUSHEL SACK $1.90 PER 2 BUSHEL SACK
BUYS THE WORLD'S FAMOUS EGG FOOD NO. 4
MIDLAND
IF YOU WANT EGGS YOU WILL FEED NO OTHER
Used by all the largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders
The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the GOLD MEDAL at the St. Louis World's Fair for greatest hatch, with 40 different makes of incubators in competition. How's that?
St. Louis, Mo., Dec. 8th, 1604.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A FILCHER, Commissioner.
And Now Comes New Reward for Merit:
Read the following telegram received from the Lewis & Clark Exposition at Portland:
"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."
WRITE FOR CATALOGUE 47—A BEAUTY
PETALUMA INCUBATOR CO.
Main Office and Factory, Petaluma, Cal., Box F. Los Angeles, 505 South Main Street
San Francisco Office and Salesroom, 33 Market St.

White Plymouth Rock Poultry Ranch
Eggs for hatching from First-Class Stock, $6.00 per 100, $1.50 per setting 15 eggs.
J. T. DAVIS, Prop. POMONA, CAL.

BUFF ORPINGTONS
Eggs from strong constitutioned, producing birds. $1.25 per setting, 2 settings, $2.00.
Robert Westcott, R. F. D. 115, Gardena, Cal.

BUFF LEGHORNS
A few cockerels for sale. After Jan. 1 eggs from choice mated pens, $1.25 per 15.
Chas. G. Miller, 40 Elm St., Watsonville, Cal.

S. C. Rhode Island Reds
Six years continuous and exclusive breeding of Reds. First on cock at L. A. Show, '06. Eggs, per 15, $2.00. MRS. E. L. COWAN, R. F. D. 1, Santa Ana.

Brown and White Leghorns
Prize winners at L. A. Show, '06. Eggs from good laying strains. Eggs, special matings, per 15, $2.00. Incubator lots, $6.00 per 100.
Hemet Poultry Yards, Hemet, Cal.

Blue Andalusian Eggs
Exhibition or utility birds. Hens have free range. Eggs, $1.50 and $2 for 15; $7 per 100. Stock for sale. Mrs. J. S. Duff, 3145 S. Hoover St., Los Angeles, Cal.

Young Half-Wild Turkey Gobblers For Sale
Turkey Eggs from pure bred Mammoth Bronze $4 per 13.
Mrs. N. Frank Morse - Fullerton, Cal.

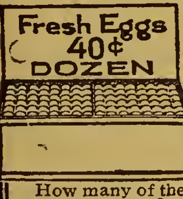
Buff Orpingtons and Barred Pymouth Rocks
Pure Bred and High Types. Eggs $2 per 14; 3 sets $5; $7 per 100. Males, $3.50 to $5. Trios $7.50 Pens $11. B. M. STONE, R. D. 6 FRESNO, CAL.

Mountain View Poultry Yard
Eggs for hatching from thoroughbred Buff and Black Orpingtons and Silver Penciled Wyandottes. A few choice Black Orpington cockerels for sale.
Mrs. C. J. Jacobs - Box 356, Monrovia, Cal.

BARRED ROCKS
EXCLUSIVELY
Send for 16-page 1905 Catalogue
H. R. CAMPBELL
Box O PETALUMA, CAL.

EGGS FOR HATCHING
from a heavy-laying strain of
SINGLE COMB WHITE LEGHORNS
I guarantee 100% fertile. Write for prices.
Golden State Poultry Yards, Lordsburg, Cal.
T. E. Mills, Prop. Home Phone 1720

WHY ARE EGGS HIGH?
We all know—because hens are not laying now. But why do poultry owners overlook this chance to make money? It must be because they don't believe our statement that
SECURITY POULTRY FOOD WILL MAKE HENS LAY.
You don't have to take our word. You can be the judge. We can make your hens lay in from 2 to 4 weeks and
WE GUARANTEE IT.
Our dealer in your town will back up this guarantee. Ask him. Will you pass this chance to make money when we take the risk? It also puts sick poultry in healthy condition and keeps them so.
SECURITY STOCK FOOD CO.
MINNEAPOLIS, MINN.



Get on The Egg Road
THE Profit in Poultry Raising is in the 30c and 40c Eggs.
How many of these, per Hen, did YOU get last winter? And are you CERTAIN that you shouldn't have had MORE?
Be CERTAIN THIS winter by using
Purina Poultry Feeds
and KNOW that you are getting EVERY EGG your hens are capable of laying.
Because there is no GUESSWORK about Purina Feeds—they have been tested by feeding different combinations and watching RESULTS in the Winter Season, until, they will make your Hens keep right on laying all winter, no matter how low the thermometer goes.
And you don't have to take OUR WORD for what Purina Foods will do either—for you can prove our claims at OUR EXPENSE.
If the RESULTS don't come, just tie up the bag and write us, and we will return every penny of your money and tell you what to do with the unused feed. You are not out a cent in making the trial, for we will supply you through your dealer, or direct, FREIGHT PAID, and the feed used in testing will cost you nothing.
This is the Money Back Line——
Ask for particulars about our FREE TEST Plan. Write today—you can't afford to wait.
ACME MILLS CO.
PACIFIC COAST MANUFACTURERS
PORTLAND, OREGON

would only be six cents on a broiler and that would not pay, I never sold to commission men, I had my private customers and never got less than 35 cents for a broiler, and from 50 to 75 cents for a fryer.

It is needless to say that the water fountains and milk fountains were scalded every day and rinsed once or twice besides, the milk was either sweet or clabber. It is best to keep to either sweet or clabber, if you give them sweet skim milk keep to it, do not change or give sweet at one meal and clabber at the next, it may disagree. Some people prefer the sour, I have given both and see no difference but I think my chickens preferred the sweet milk.

EDITOR'S QUESTION BOX.

Ration for Orpingtons. (Mrs. H. M. J.) A neighbor of mine used your food formula for Leghorns with great success, the chickens doing very well, indeed.

Would you please advise me as to a food formula for the Orpingtons? What would you use for a "mash?" I am quite anxious to find a food to make them lay better.

Thanking you, I am, sincerly yours,—H. M. J., Long Beach, Cal.

Answer.—A good mash for Orpingtons for egg making would be two parts bran, one part alfalfa (alfalfa meal) and one part beef scraps or meat meal, with a little salt and pepper, just as you would season your own food. I always advise our readers to get the bulletin on poultry food No. 164 from Berkeley, balance their rations by that because in some localities some foods are cheaper than others. When fowls do not lay well, if they come from a good laying strain it shows that some element of the egg is lacking in their food. The usual lack is animal food and green food. Orpingtons are hearty eaters and if given too much grain in proportion to the meat will grow to fat inside instead of to eggs. Of course they must have grit and shell or lime that has been either made into mortar (old plaster) or mixed with water, not only air-slacked. Skim milk is a great help towards egg production.

See my reply to L. G. W.

* * *

Lime, Greenfood, Dust. (L. G. W., Tropico.) Is there any good plant for forage for chickens which I can grow between walnut trees without doing them an injury.

2. My hens are much in need of lime. What is the best form and way in which to feed it?

3. Is there not something simple and cheap which one can put where the chickens burrow, with which they can practically free themselves from lice, or what simple remedy do you advise?

Answer. The best green food for chicks is clover or alfalfa, but I should think wheat or barley planted between the trees would, followed by a crop of peas. You had however, better ask our botanist—Swiss chard one of the beets is a good green food.

2. A very good and easy way of giving lime, is to mix some lime, after slacking with some sand leave it twenty-four hours to stand then pour it out on the ground, it will form a cake, break a little off with your foot every day, the hens will eat with avidity all they need.

3. You can put into the chicken dust bath any good lice powder, or tobacco dust, or carbonated lime, or even ashes from the stove. Painting the perches with Lee's lice killer also is excellent. These will keep the fowls free from lice if you start with them free.

* * *

Balancing Ration.—(G. B., Upland.) I have a flock of 24 Barred Plymouth Rocks. The morning meal consists of a mash moistened with warm water composed of 2 pounds green alfalfa leaves, 1 pound bran, 1 pound shorts, 1 pound corn meal (coarse), ½ pound meat scraps, [illegible] pound linseed oil cake meal, ¼ pound chopped onions, charcoal, peppers, table scraps, etc.

The evening meal consists of 2 pounds fo wheat, 1 pound Egyptian

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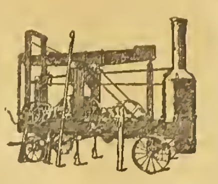

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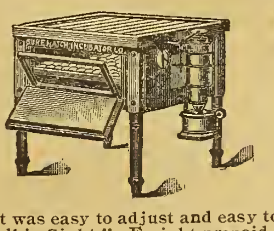
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corn. Do you suggest any change in ration? It seems to me that the cost is more than it ought to be, yet I do not know how to balance the ration for less amount.

Answer.—You are feeding rather too fattening a ration for Plymouth Rocks. Leave out entirely the linseed oil meal until next summer at moulting time. If you can give something like cabbage or beet tops or a beet at noon it would give them something to interest them. Add a little more meat to the mash instead of the linseed meal.

* * *

Leghorns and Plymouth Rocks.—(A. B., Healdsburg.) I would like to know through your most valuable paper: (1) Do Plymouth Rocks lay as many and as big eggs as White Leghorns? (2) Are Plymouth Rocks as strong and as healthy as White Leghorns? (3) Do White Plymouth Rocks lay eggs as white as the eggs layed by White Leghorns? My husband stands by the Plymouth Rocks. I stand by the White Leghorns. so I wish the farmers' friend (Cultivator) to settle the question for us.

Answer.—(1) Some Plymouth Rocks lay large eggs and some lay small, and it is the same with the White Leghorns. It depends upon the family they belong to. You can breed a family (a strain) that will lay large eggs by always hatching only from the largest eggs. In this way you can build up a strain (or family) of large-egg layers in any breed. Also by choosing eggs from the hens that lay the most eggs, you can build up a flock of hens that lay many eggs, and in the same way by hatching the eggs from your best winter layers you can get a flock of winter layers.

(2) Yes they are the same if you hatch your chicks from healthy vigorous parents; it all depends upon that.

(3) White Plymouth Rocks lay light brown eggs. I think we might in a few years, by choosing the whitest eggs for hatching, perhaps get a flock of White Plymouth Rocks that will lay white eggs.

The best way of settling the question will be to let whoever takes care of the fowls keep his or her favorite breed. Anyone can do better with the breed he likes best.

* * *

Roup.—(J. F. M.) I have been a reader of The Cultivator for some time, though not a subscriber, and have been especially interested in your poultry department. As I have been having trouble with my chickens for some time I thought I would write you for advice. My fowls are B. P. Rocks and B. Minorcas of excellent breeds. Last fall I left home for a time, so I gave my chickens to a friend to care for with his own.

When I returned I noticed many of them were discharging from the nostrils. The discharge had a very foul odor. Many also emitted a sharp piping cough. As their general health was not affected I thought the trouble was only an ordinary cold and treated them for that. Later on some smelled so badly that I killed them, their ears being filled with a cheesy substance, frothy at the eyes, and slime in the throat. Despite these facts they ate well and held their weight. As the rest seemed to improve and stopped coughing, I thought they would soon be all right, but recently their trouble has developed a new phase; a rattling in the throat, caused from phlegm in the windpipe, and ulcers in the throat, especially around opening of windpipe. For this I dipped a feather in solution of bluestone and swabbed out the throat. This stopped the rattling and also removed the ulcers, but the discharge at the nostrils still continues. I have tried many remedies, but cannot cure my birds entirely. I have consulted a number of poultrymen without learning what ails my chickens. Can you tell me what ails my birds and how to cure them? I have been told it is roup, canker, and nearly everything else. I feed a mixture of grains in the morning, green stuffs at noon and mash at night.

Answer.—It is roup, combined with either diptheria or canker. Roup commences with a cold. Some of your older fowls had that and got well. With some of your younger diptheria developed, and with some (those that do not have a bad odor) it is canker. There is one germ of roup, another of diptheria, and yet another of canker. The cure for diptheritic roup is per-oxide of hydrogen, either swab the ulcers (the false membrane) with it or spray up the nostrils and into the throat with an atomizer. For canker, sulpho-carbonate of zinc is the cure. Paint the ulcers slightly with a solution of four grains of sulpho-carbolate of zinc to one ounce of water—it is very cheap. Put into the drinking water for a week a piece of bluestone as big as a bean for every quart of water and do not give them any other water. If they caught roup at your friend's you may be sure they caught lice also. Clean them of lice, and if at the end of a week they still have a discharge from the nostrils pour a cup of coal oil into two quarts of water in a pail, dip the head of each sick chick into this slowly and hold it there while you count three. I think you will find the per-oxide of hydrogen sprayed up will be the most efficacious as it reaches higher up into the head than any other way. Give the bulb two squeezes for each nostril and three in the cleft of the mouth.

* * *

Crossing Ducks.—(R. K., Santa Barbara.) Please let me know through your paper if it is advisable to cross Indian Runner ducks or common drakes with Pekin ducks.

Answer.—It is best to keep the different breeds pure without crossing.

* * *

Ducks.—(N. E. M., Santa Ana.) I would like a little information concerning duck feed. My boy has four I. R. ducks and one drake, and while they have made a remarkable record, laying 428 eggs in the last four months, yet now they are dropping down to one egg a day. I would not be surprised at their resting after that harvest of eggs, but they are not eating their feed now, and I thought something must be wrong. They have over 50 acres of alfalfa and ploughed ground to run on and they are fed one corn can full each of bran and ground corn mixed with Darling's meat scraps and sand twice a day, and in their yard are kept oyster shells, charcoal, lime and a box of sand, and always have all the water they want to drink in deep dishes. Can you suggest any reason why they should refuse to eat that ration, and is their falling off in eggs due to their not eating or only taking a rest? They are out rustling as soon as they are let out of their pen.

Answer.—Your Indian Runners have certainly done well. It is rather difficult for me to decide why they are resting now, unless they really have earned a rest. Ducks and hens also eat less when they are not laying. The surplus food that is necessary to make the egg is not required when they are not laying. Your ration seems to be well balanced, and I think that the ducks are either moulting or resting, and that by next month they will commence to lay again. If they continue to leave their food, miss a meal occasionally and they will be ready for the next meal.

* * *

Worms, Vent Gleet, Tumor.—(A. S. I would like to ask a few questions. (1) I killed a young White Leghorn cockerel a few days ago. He seemed in perfect health as far as I could judge, but on opening the gizzard I found at the end opposite the open-

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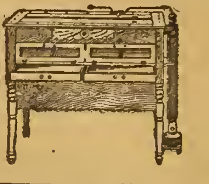

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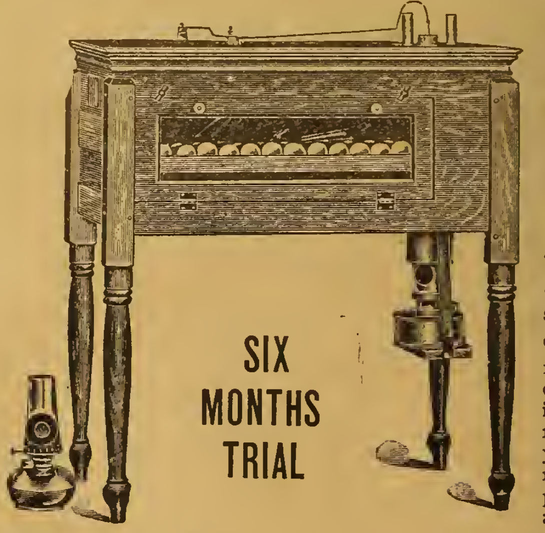

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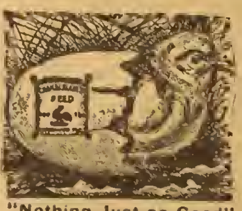
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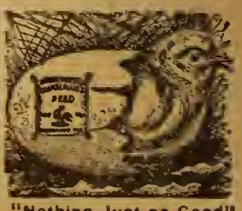
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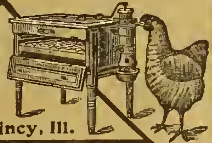

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ing that the inner lining was grown fast to the outer flesh and was literally perforated with small white worms about the size of horse hairs. All other intestines seemed perfectly normal and only the end of the gizzard seemed affected. What is the cause and cure?

(2) For several years I have had occasionally a hen that would have a sore around the vent. It is always covered with thick white matter, something as a bad case of roup shows around the head. They eat well, lay good and do not seem to mind it at all, but some day would find them dead under roost. I now have a yearling rooster sick the same way. It is the first male I have ever found affected that way. On dissecting one affected so the other organs usually seem all right. Sometimes the gall is enlarged and sometimes the liver is large and light colored.

(3) Today a hen died. On opening it I found a soft pulpy growth had nearly filled up the cavity around the heart and the lights had entirely disappeared, their space being filled with the growth. It seemed a good deal the texture of the liver, but a lighter color and soft, as if partially decomposed, though no odor was distinguishable. The liver seemed normal as to size, but soft in spots. The gizzard was all right and filled with sufficient grit. She was in good flesh, but not laying, though a mass of small eggs were there.

I have pure White Leghorns, unconfined, and I feed mostly on clean wheat. No roup or cholera amongst them; reasonably free from vermin. Can you give me any clue to the trouble, and should I kill those under fig. 2?

(1) The round worms such as you describe are not uncommon among fowls, and are familiar to dressers of poultry. The round or thread worms are the most common of these.

Treatment.—If you suspect worms, dissolve in the water that is to be used for the mash two grains of santonine for every bird that is to be treated. Give a teaspoonful of caster oil to each bird after the mash, and watch the results. Repeat the santonine every other day for a week. For small chicks give a teaspoonful of turpentine to a quart of water, and allow no other drinking water for a week. Isolate the infected birds, thoroughly clean and disinfect the yards, and burn the droppings.

(2) I am afraid the disease here mentioned is what Dr. Salmon calls "cloacitis," or vent gleet. It is a contagious catarrh of the cloaca. It is not a common disease. The treatment is long and tedious, and unless the fowl is very valuable the hatchet is the best cure.

(3) The tumor which you describe in the hen that died yesterday was, I think, developed by one of the aspergilli, a fungus growth, the spores of which are found in moldy hay or grain. The only thing I cannot understand is, how could a hen be in good flesh and condition having such a tumor. It may have been tumor of the ovary, which seems to be hereditary, and for which there is no cure, as it is rarely discovered until after death.

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W. E. Mercer - - Ventura, Cal.

Rhode Island Reds
Record making layers; average per hen, whole flock, 180 eggs for '05. $1.25 per setting, 2 settings, $2.00; incubator lots, $6.00 per 100.
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OFFICE OF
Must Hatch Incubator Co.
(INCORPORATED)
A. E. Bourke, Pres. Phone Black 1211

PETALUMA, CAL., JAN. 1, 1906.

TO WHOM IT MAY CONCERN;

As the chicken raising season is at hand, we beg leave to call your attention to a few of our specialties.

Do you need an Incubator? Our machines are fully guaranteed and have proven themselves unsurpassed wherever used.

Do you need Brooders? We manufacture just what you want; fully guaranteed, made of the finest material and of the best possible workmanship, and, above all, a practical machine which saves the purchaser money, time and labor.

Do you need Poultry Supplies of any kind? We manufacture a line of Supplies the use of which makes Poultry Raising not only profitable, but a pleasure. Among our specialties are:

Our Water Fountains; our Self Feeder for Chicks, our Feed Troughs, large and small; our Lamp Fillers.

Our convenient Must Hatch Nest Boxes; our safe and sure Must Hatch Insecticide, our sanitery Must Hatch Disinfectant, our sure death Must Hatch Lice Exterminator, our Poultry Compound, a fine Spring and Fall Tonic.

In connection with the above list, all of our own manufacture, we can also furnish the following, which are indispensable to the Poultrymen:

The No. 128 Clover Cutter, the Enterprise Bone Mill, the Ohio Feed Cutter, the Banner Root Cutter, the Enterprise Feed Chopper, the Ideal Duplex Feed Mill, and the Farmer's Boiler.

Do you wish to make your own Incubator or Brooder? We can furnish you all the necessary parts for making an Incubator or Brooder, also plans for the best and most practical Poultry Houses.

Did you ever purchase Just Hatched Chicks? We have a Hatchery of 50,000 chicks per month capacity in operation the year round and have, for the past few years, been successfully shipping, in our specially constructed carriers, just hatched Chicks, to distances as great as 2,000 miles. If you need them, book your order early, as our future delivery list is rapidly filling up.

We can also supply White Leghorn hatching egg in quantities desired. If you have not already received our catalogue, write for Catalogue B, and you will find therein a more detailed description with prices, etc., of the above.

Hoping to hear from you in the near future, we are,

Yours Very Respectfully,
MUST HATCH INCUBATOR CO.

A Million Dollars For the Benefit of the Poultry Raiser

The Hen—consider what she does. Her own value is 50c and she lays an egg daily, valued at, say 2c. In one month's time she lays enough eggs to equal in value her own self.

The annual output of the gold mines of the Earth is small compared to the value of the Egg crop. The American hen produces annually more wealth than all our Wheat fields.

In taking up the Poultry Business, one should remember that "there is more profit in a small flock, WELL FED and cared for than in a large flock poorly fed." The idea that a flock of fowls will shift for themselves and return a profit to their owners, is a mistaken one.

They must be **properly fed** and cared for **every day** in the year if they are to prove profitable.

A. R. COULSON

To increase the profits of the Petaluma poultrymen by at least

$200,000 per Year

They need it. They deserve it—and if they WILL IT within themselves, they can EACH HAVE PART of it.

The rest of the poultrymen on the Pacific Coast may also have a share of the profits. This man's methods, if used by the poultrymen, would benefit the farmers and poultry raisers of California by **one million dollars** per year. It would increase the value of the Poultry Industry of the United States to over $600,000,000 a year.

$4 00 a Hen

How many laying hens have you got now? How many more can you get?

Suppose you could make those hens bring you in an income of $4.00 apiece this year? Could you make use of the money?

Make one strong, everlasting attempt to get out of the rut.

Make some money this year—make enough so you can BUY ALL the things YOU WANT, and still put quite a wad in the bank.

Make the money out of those hens of yours—don't lose hope. Science now comes to yaur assistance and you can make a hen lay

$4.00 Worth of Eggs

Strive to make each hen earn $3.00 a year profit for you.

How? JUST THIS WAY: Success lies within yourself. Are you willing to try?

Make up your mind and stick to it, that you are going to get all there is coming—that you will always see that the hens are kept supplied with clean, fresh drinking water, clean feed and water troughs, green feed, for the hens, warm, comfortable houses in winter, shade in summer, and FEED THEM once EVERY DAY without fail, a good square meal of COULSON'S IMPROVED MASH EGG FOOD, and a variety of other grains as needed. Coulson's Scratching Feed is also recommended to be fed once a day.

Spend a little more for the feed and make your hens lay twice as much.

You know that if you feed your hens this year the same as you did last year that your profits will not be any more, and that you will be just as poor one year from today as you are now, only one year nearer the grave.

To make your hens lay twice as many eggs this coming year, more than they did last year, you must feed better.

The COULSON IMPROVED MASH EGG FOOD will do the work. Use it and get rich.

$4.00 Per Hen

Coulson's Improved Mash Egg Food will only cost you 10c a bag more than the Regular Egg Food or about 10c per year per hen more to feed her, but the results in egg production will be increased by about $1 worth per each hen per year more. $4 Worth of Eggs from each hen per year. Try it.

Their 1st Birthday

Time, December. Since they were three months old they have been fed daily on Coulson's Mash Egg Food. These will be $4.00 Hens this year.

Are You a Knocker?

You know there is a certain class of men who think it necessary to knock every suggestion they hear advanced. It hurts them to suppose that man should be able to make suggestions to them. They are like the Irishman at a Donnybrook Fair, whowent around with a club in his hand, and every time he saw a head, hit it. Every time a suggestion is made to a man of this kind he will get his hammer and knock it on the head.

When Columbus sailed away from Europe people laughed at him, but when Columbus came back with his ships loaded with parrots and savages, proving that there was such a land, then everybody was eager to go to the new country and stake out a claim.

One Man Worth Millions to Iowa

Back in Iowa, a school teacher discovered a method of caring for and cultivating corn so that the yield would be increased nearly 100 per cent. So successful were his methods that Funk Bros., who had 20,000 acres of corn land under cultivation, agreed to hire him for one year to manage their place on good salary, to see what he could do. The result was that year they had an increase in their crop of over 100,000 bushels. The next year, 1904 this man traveled throughout the state of Iowa, teaching the farmers who were willing to learn, how to cultivate corn by a scientific method. That year, as a result, the corn crops of Iowa were thirty million dollars more than had been for any years before, and for ten years previous, the average yield was only 27 1-2 bushels to the acre. Now it is over 40 bushels to the acre. This shows what science can do.

Pick up the new ways—or you'll get left way behind. If in the poultry business, make each hen bring you in an income of $4.00 a year, by feeding **COULSON'S IMPROVED MASH EGG FOOD.**

Keep Up With the World

Fifty years ago you could only travel as fast as a horse could go and over rough roads. Now you can travel from one end of the country to the other between two Sundays. Think of the electric cars, or the sending of messages through the air! And don't forget about the new science of making a hen produce $4.00 worth of eggs in a year.

Don't Try to Get Along Without It

Nowadays it is not the things that we can get along without, but it's how far ahead we can get with the things that will help us to get there.

The Feed Free for One Year

There is no doubt about it. if you feed your laying hens Coulson's Improved Mash Egg Food every day for one entire year, that the hens WILL LAY so many MORE EGGS that the EXTRA EGGS will amount to enough to pay for the feed.

$4.00 a Hen

The average hen, according to statistics, lays only 66 eggs per year—many do not lay that many. A few poultrymen, by imitating as near as they can, a balanced ration, make their hens average 100 eggs per hen, and some as high as 110 eggs per hen per year. A number of poultrymen, last year, by feeding Coulson's Egg Food, averaged 180 eggs per hen per year.

One experienced poultryman, with 2,000 laying hens, fed Coulson's Egg Food the entire year, and the hens made an average of 184 eggs each. Taking the year through, the average price paid for market eggs last year was 28 cents a dozen. According to this, these 2,000 laying hens brought in an income of $8,000.00 OR $4,00 PER HEN.

What It Cost to Feed a Hen One Year

The cost of feeding Coulson's Improved Mash Food every day for one year, and also all the extra grain, Coulson's Scratching Food, etc., included, is $1.25 per hen.

So, if the hen produces $4.00 worth of eggs, they earn $2.75 per hen per year, average profit.

Egg Making Machines

Suppose you could find the substance that would strengthen and develop the egg-making organs of the hen, and at the same time supply the proper feed that could be easily digested and turned into eggs. The result will be that your hens will get to be regular egg-making machines.

That's what you want, isn't it? Then feed your hens one year on Coulson'sImproved Mash Egg Food, and make your little fortune. **SAMPLE FREE.** Ask your dealer about it or send for circular and free samples.

COULSON POULTRY AND STOCK FOOD CO., PETALUMA, CAL.

EVERGREEN NURSERIES.

Did you ever meet Tim Carroll of the Anaheim Evergreen Nurseries? If not, you should. He is an interesting character and has surrounded himseif with one of the most interesting collections of plant growth, and a few moments with him in his nurseries is profitable.

"Yes, sir, I have been in the nursery business since '68. Came here in '67 and was fully established in the nursery business in '68, and since the death of John Rock, I am the pioneer of the State in the nursery business." This long experience has given Mr. Carroll an extended view of the nursery business and has fitted him to cater to the wishes of a discriminating public in a way which is sure to give satisfaction.

Palms are the principal feature of his nursery stock, but by no means the only one. The soil and climatic conditions of this neighborhood are such that the palm has done exceptionally well, so that for years he has made it his one great specialty. He has acres fo Canariensis, or the Canary Island date, whose dark green feathery leaves, wavering over a whole field of them, gives a most beautiful effect. Of these he has all sizes from the baby seedlings up to mammoths in tubs which require derricks to hoist them into a wagon. Of Robustas he also has a vast number. This is, as of course all know, very similar but in some respects superior to the common California fan palm, or Filifera, which has the disagreeable habit of turning yellow or brown during the colder months, and the earlier leaves die much quicker than do those of the Robusta and the Robusta also remains a bright green at all seasons.

Palms and Dracaenas Balled Ready for Shipment.

Besides these, there are Dracaenas galore, Chamerops, Excelsas, Sago, Kentias, Acacias of many kinds, Rubber trees, Pines and a miscellaneous lot of ornamentals of great beauty, and, long names. And Eucalyptus, almost every variety, from Globulus the common Blue Gum to Ficifolia, or the magnificent Scarlet Flowering Gum.

In the utility line, oranges, walnuts, and many other trees are grown to a vast extent; but one fruit upon which Mr. Carroll devotes much time is the Advance Loquat, of which he has a large number of fine budded trees. This loquat is a prolific producer of that delicious fruit which has proven profitable to many California producers.

We give on this page an engraving showing a bunch of palms and dracaenas ready for shipment and gives a slight idea of the extent of the business of these particular nurseries, and also how well fitted they are to take up the work of supplying large ornamentals which may be used by the wealthy planters to give a new place the appearance of one long established in a very short time.

But there are, as well, small plants which those of more modest means may secure and wait for the years of growth to give them size.

All of Mr. Carroll's time has not been given to the nursery business, for at odd moments he has found time to invent a dumping apparatus fitted for unloading from wagons to bins, boats, or cars sugar beets, coal, coke, corn, ore or other materials. This has been established in many sugar factories and on some piers where large quantities of materials have to be unloaded.

With Mr. Carroll is associated his three sons, who are active factors in the success of his business. He issues a beautiful little catalog, which will be sent on request.

The California Rose Co. of Los Angeles have just issued their 1906 catalog, and, like its predecessors, it is distinctively a work of art.

A NEW COMPANY.

The organization of a new company for manufacturing purposes which may be of interest to readers of The Cultivators has been effected during the past week. The company is the International Gas Generator and Power Company, the business of which will be the manufacturing of a gas machine which will make gas for use of gas engines and for house use from the lowest grade of crude oil. The principal factor of this machine is the immense saving in fuel expenses.

The power manufacture will consist of the well known Success engine long advertised in the columns of The Cultivator and used by many of our subscribers. The officers of the new company are: C. W. Harrison, president; M. C. Tunison, vice-president; C. J. Flower, secretary and treasurer. The capital stock is $200,000. It will be a close corporation.

BIG POULTRY YARDS.

While at Hanford recently, e drove out to the ranch of H. R. Lane to see his bunch of white Leghorns. One man had told us he had "quite a few" hens but we were not prepared to see "acres" of them. But they were there and fine large runs, and every hen a healthy looker. Big runs with alfalfa in each is Mr. Lane's hobby. Between the two long rows of runways is an alley down which the wagon goes with feed and to gather eggs.

Brooder house, incubator house, shop and feed room are all most complete and fitted to give greatest economy in handling the poultry business in a large way.

Anyone having need of eggs for hatching will find Mr. Lane's stock of the best. His hobby is to grow hens with a record for doing things.

Rains of the past week have made the pastures in Tulare County green.

THE OLD ESTABLISHED
WOODBRIDGE FERTILIZERS
— ARE RELIABLE —
THE WOODBRIDGE CHEMICAL WORKS
318 East First St.
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Almond Trees

We have a full assortment of Almond Trees of the following sorts:
NONPAREIL,
I. X. L., NE PLUS ULTRA,
TEXAS PROLIFIC,
DRAKE'S SEEDLING

Wine Grapes

THOMPSON SEEDLESS
LENOIR (Resistant)
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Write us for prices. Catalogue and Price List always free

The Fresno Nursery Co.,
Inc. (Capital $50,000.00)
Fresno, California
ESTABLISHED 1889. 320 ACRES.

American Fence Talks

American fence is a structure of hard, stiff steel wires, possessing great strength and flexibility, adjustable to uneven ground, sound, durable and guaranteed. Great improvements are continually being made over the fences of years ago. See the modern, up-to-date American fence, built of big lateral wires, with heavy upright or stay wires hinged—the most perfect structure for a square mesh fence.

The thirty plants of the American Steel & Wire Co. make every known grade of wire, from the stiffest wire for pianos to a wire almost as soft as silk for weaving into wire cloth. With these enormous facilities for manufacture and observation of the action of wire in all kinds of service, not only is the best wire made for the use required of it, but for less money.

It is Steel that makes possible the great modern structures like bridges, skyscrapers, locomotives and steamships that people confidently trust. Steel for wire is specially made and becomes stronger and more durable by drawing into wire and annealing. And when thoroughly galvanized by lately improved processes and woven into American fence, makes the most substantial structure about a farm. Properly put up and treated, it is a permanent and money-making investment for many years.

We sell through dealers all over the country. In this way, the buyers' interests are best looked after. Dealer then becomes your business friend and he will see that you are treated right. See him, examine different styles, get catalogue and make selection to suit your requirements. Or, write us direct and we will send catalogue and tell you where you can get the fence.

NOT EXPENSIVE—Prices range from about 17 cents a rod up, according to height, style and location of your place.

American Steel & Wire Co.
Chicago Denver
New York San Francisco

GRAFTED WALNUT TREES

If you are going to plant Walnut Trees, write us before planting. We carry a full line of all kinds of Nursery Stock.

CITRUS TREES
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FLOWERING AND
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ORANGE COUNTY NURSERIES
E. S. RICHMAN, Proprietor
Phone Red 151 **Fullerton, Cal.**

Household Department

OUR OWN COUNTRY.

There is a land, of every land the pride,
Beloved by Heaven o'er all the world beside;
Where brighter suns dispense serener light,
And milder moons imparadise the night;
A land of beauty, virtue, valor, truth,
Time-tutored age, and love-exalted youth;
There is a spot of earth supremely blest,
A dearer, sweeter spot than all the rest,
Where man, creation's tyrant, casts aside
His sword and sceptre, pageantry and pride,
While in his softened looks benignly blend
The sire, the son, the husband, brother friend.
Where shall that land, that spot of earth be found?
Art thou a man?—a patriot?—look around;
O, thou shalt find, howe'er thy footsteps roam,
That land thy country, and that spot thy home!

—James Montgomery.

IT WAS A RINGER.

Down in the Washita mountains," remarked truthful James, as he lit a stogie, "there is the most wonderful wonderful echo perhaps that there is anywhere on earth." It's between hills and echoes just the same on one side as the other. Throw your voice one way and it will strike the side of the mountain and then bounce over and hit the mountain on the other side, and then bounce back and strike the first mountain, just keeping the thing up indefinitely. One day I was walking through there and just by way of experiment I let out a holler. It occured to me to quote a little poetry I happened to remember, so I yelled out:

"Lives there a man with soul so dead
Who never to himself hath said:
This is my own, my native land?"

"Well, sir, that poetry hit the side of one mountain and bounced back to the other mountain where it was repeated word for word. Then it bounced back to the first mountain and was repeated again. I stayed there for more than an hour listening to that poetry being tossed back and forth, until I got sort of tired of it, and went away. I forgot all about it for a month, when I happened to go back there, and as soon as I got near the place I heard, as I supposed, some feller talking. I went on and could not see any body, but I could hear something that sounded like a line of poetry. When I came to investigate, blamed if I didn't find that the poetry I had quoted a month before had been bouncing back and forth ever since. It had hit up against the rocks until the first and last lines were worn completely out. All there was left was

"Never to himself hath said."

"That line was still bouncing back and forth from one side of the gorge to the other. I could notice that the voice was getting hoarse, but the echo never stopped.

"Two weeks after that I went back again and found that the words were all worn out but one, the word 'never.' I doubt, gentlemen, if there is another echo like that anywhere in the United States."

"Was that a stag dinner you were at last night?"

"Stag! Man alive, it was stagger."—Philadelphia Ledger.

TOO TRUSTFUL.

Hemery, the winner of the Vanderbilt cup, was being consoled with on the destruction of his superb car.

"I was too trustful," said the young Frenchman, with a rueful smile. "I let the people crowd around me, trusting them implicitly, never thinking that any one would be so careless as to throw lighted matches about. And hence—pouf—my car went up in a mass of flames.

He lighted a cigarette. He sipped his coffee.

"To be too trustful," said Hemery, "is a fault of the French people.

"A stranger once visited a merchant of Marseilles with a letter of introduction from Alexandre Dumas. It was a glowing letter. The merchant welcomed the stranger warmly, and entertained him with great hospitality for three weeks.

"Then in the night the guest disappeared, taking with him his host's best horse, and a quantity of silver plate.

"The merchant on his next visit to Paris sought out Dumas.

"A pretty guest you sent me," he said bitterly. "The fellow decamped with my best horse and plate worth 5000 francs."

"What!" cried Dumas, horror stricken. "Did he steal from you, too?"

A HARD STRUGGLE.

"Men who wear glasses at not attractive to women," said the comedian, Joseph Coyne in a Washington club. "Fat men, too, rarely please womankind."

"The former fact was forcibly brought home to me on a railway journey recently.

"The drawing room of the car I was riding in was occupied by a bride and groom—she was pretty, he was ugly and weak eyed, but a millionaire.

"From where I sat it was possible to hear a good deal that went on in the drawing room. This is one of the things I overheard:

O, George, why do you make faces at me like that?"

"I can't help it, darling. My glasses are falling off, and I don't want to let go of your hands."

FORCE OF HABIT.

Senator Beveridge desired to illustrate strenuously the force of habit.

"In Sullivan, where I spent my boyhood," he said, "there was a physician whom everybody liked; a hard-working, modest, absent-minded man.

This physician was the guest of honor one evening at the house of a leading citizen, and when the gay assemblage entered the diningroom, the leading citizen said to him:

" Now doctor, on account of your surgical skill, I'll ask you to carve. That bird is a 24 pounder, and yet he is as young and tender as a spring pullet. None but you could do justice to him."

"The physician his mind on other things, smiled absently, took the head of the table, raised the knife and made a deep incision in the breast of the turkey.

Then he frowned, rummaged in his pocket and brought out some absorbent cotton, a roll of bandages, and a paper of pins. With these he proceeded to dress and bind up the wound he had made.

The guests were stricken dumb. They looked on in utter amazement. The doctor inserted the last pin, and patted the neat dressing he had made. Then he looked up and smiled.

"And now, " he said "let us hope that in a week with rest and care, our patient will be on his feet again."

THE THINGS WE EAT.

Gregory E. Owens, a food inspector of Manchester, had an odd experience the other day.

He was examining the meat in a small butcher shop on a back street. The greater part of the meat was fairly good, but there was one lot of pork and beef that was questionable.

The butcher stood outside with a customer. The inspector called him in.

"Look here," he said, "what is your opinion of this meat here?"

The butcher looked it over.

"I had forgotten all about that," he said. "It is pretty old stock."

"Well, what is your opinion of it?"

"My opinion," said the butcher slowly, "is that it is unfit for human food, but it might do for sausage."

HIS OWN DOSE.

Irving Grinnell, Treasurer of the Church Temperance Society of New York, told at a temperance meeting a dramatic story.

"A woman entered a barroom," he said, "and advanced quietly to her husband who sat drinking with three other men.

"She placed a covered dish on the table and said:

"Thinkin' ye'd be too busy to come home to supper, Jack, I've fetched it to you here.'

And she departed.

"The man laughed awkwardly. He invited his friends to share the meal with him. Then he removed the cover from the dish.

"The dish was empty. It contained only a slip of paper and that said:

"I hope you will enjoy your supper. It is the same your wife and children have at home."

STICK TO THE FARM.

"Let me tell you about a farmer in Ohio," Prof. Spillman said. "He has eighty acres. Last spring he wrote to me saying although he worker like a horse, he never had any money and he wanted to know if we thought he could make a living by moving to town and becoming a drayman. He kept three cows, he said, and could turn out good butter which was about the only thing he could do with any degree of success. I told him what to plant and where to plant and also how he could increase the number of cows. I didn't hear from him until the other day. He apologized for not writing to me sooner, saying: "I have been so busy carrying out your plans that I have neglected to thank you. Let me tell you now, however, that I have made more money during the last year than ever before in my life. Somebody else will have to be the village drayman."

* * *

A woman living in New York City laughingly tells of her efforts to help a poor woman with a large family of children. They seldom had enough to eat, little to wear and were frequently without shelter, and on account of their extreme poverty the privileges of school were not available. A place was found for them about fifty miles in the country on the farm of a friend who gave them the use of a neat little cottage free, and who also was willing to pay for all the work the mother and the children could do about the house and farm. The children were to have the privileges of the nearby school. Everything worked well, apparently, for a time, until one fine morning no "friendly smoke" appeared from the chimney of the little cottage, and no one came to the farm house to assist in the work. Inspection of the little home showed that the mother and children had literally flown from the scene. A week later, my friend met the woman on one of the busy streets of the city. To the questions propounded came this reply—"Oh, sure! and it was too lonesome out there to stay! There was nothing going on! No parades, nobody going by on the streets, no neighbors droppin' in to talk over miseries with, no fights and murders, no fires to run to," etc.

Well, right there was the key to the situation! Unable to read and write, with no knowledge of anything, except what was gathered from the city pavements, "misery and trouble" around them at all hours of the day and night, they missed the horrible excitement of discussing the misfortunes and crimes of their fellow beings. Although so many infinitesimal atoms, whose loss from the complement of the city vitality would be no more noticed than the annihilation of so many motes in a sunbeam, yet they felt the attraction of friendly intercourse with kindred atoms and so gravitated back to their natural element. Taken without due preparation to the country, it proved an utter blank to them. Baring the creature comforts of life, it was like placing them on a desert island in mid-ocean.

It is not necessary to consider the conditions of city life except to profit by the lessons that may be learned therefrom.

Returning to the consideration of the drag back to the content and happiness of the farmer and his wife in that they cannot hold their sons daughters to farm life, it will be advisable to reflect upon the condition of their surroundings and then search out the reason of their aversion to it. It is easily found and defined as a lack of interest in, due to the ignorance of, the details of daily life. The city cousins come to visit them, and they are full of animation and narrate many stories of the wonderful things they have seen at school, at the museum, in the parks, etc., and the poor little country bumkins are speechless in blank wonderment and envy. They have nothing to relate. Everything is so simple and commonplace around them; nothing but grass trees, bushes, meadows, orchards, nut trees, fields of wheat, rye, oats, barley, alfalfa to towering stalks of corn, hills, immense rocks, a river, perhaps, a windmill, horses, cows, pigs, sheep, hens, chickens, dogs, kittens, lots of pets, bees, insects, birds in every variety, animals of the forest and prairie, beautiful wild flowers all around. No! Nothing to speak of! Poor little mor-

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tals! A thousand things around them, but all so eommon that they are not worthy of mention or even notice, and for the simple reason that they know nothing of them.

Right here is where Nature Study comes to the rescue. These restless active minds must be supplied with the wherewithal to satisfy the craving that leads them to seek other scenes for its gratification. Coutry children above all others are the ones to whom the mysteries of nature should be unfolded.

HER BEST ACCOMPLISHMENT.

A young married lady, who by the way, is an accomplished artist in oil, was telling the Cultivator recently that she enjoyed housekeeping for the variety of incidents it embraces. She said: "My father spent thousands on me to make me an educated girl. I can paint pictures which will sell in Philadelphia or Chicago or New York, but I can make bread and bake pies which my husband insists are better than he ever ate in Delmonico's swell restaurant. I consider my cooking ability my best friend.

SHALL THE FARMER SEND HIS SON TO COLLEGE.

"The other day I advised a well-to do farmer to send his son to an Agricultural College," said Mr. Kelsey of Missouri recently. "If I wanted to be sure he would never amount to anything as a farmer, I should do so," was his reply. There are a great many people who believe just as this man does that education leads away from agricultural pursuits. I remember quite well when I was a Missouri farmer boy, my father used to dampen my ardor for an agricultural college education by telling me of a schoolmate of his who went off to college, married a college girl and then came back to live with his parents on the farm. "And he never did any good," the old gentleman would conclude, "and finally got away with most of his father's property."

The trouble about the old gentleman's reasoning, as the Cultivator has often pointed out, is that he doesn't understand that the men who do the teaching are not, as he supposed, ignorant of the practical problems of farm life. The teachers of horticulture in many colleges, have their own fruit farms. The teachers of animal husbandry are actually engaged in feeding operations upon their own farms, or upon the college farm; the teachers of dairv husbandry have been managers of private creameries. And so it goes. It is the practical knowledge these teachers possess which give them value as college farm educators. Some of the ablest men we have in motion today graduated from the agricultural college.

HIS VALUABLE ASSET.

The experience a young man gains on the farm is a most valuable asset. He should not throw it away by entering some other profession in which this experience is of no special value. This is particularly true when we consider the extent to which most of the professions are crowded and the unusual opportunities now afforded in agriculture.

The college boy—"Dad, I think I'll tackle the Wall street game as soon as I get my sheepskin."

The old man (dryly)—"Well, I believe that's the proper apparel for young men in that district.—Puck.

Cookery Recipes

MASHED SWEET POTATOES.

Boil with the skins on and peel into a hot sauce pan. Add a half cup of hot cream to a half dozen potatoes.

* * *

LOIN OF VEAL, FRANCIS STYLE

Stuff about seven pounds of the loin of veal cut from the best end with veal force meat, truss it and cover it over with sheet of thickly buttered paper. Roast for an hour and a half, basting frequently with butter. At the end of the time baste it with milk or cream until it is well cooked, which will take about thirty minutes longer. When done make the gravy in the pan with the basting cream.

* * *

FRIED ONIONS.

Cut large white onions in thin slices so as to form large rings. Drag them around in a pan of flour until they are thoroughly covered. Plunge them into a kettle of hot lard and fry until they are golden brown and quite crispy. Drain on a cloth, season with salt, and serve on a folded napkin.

* * *

ONIONS SUPREME.

Peel and cut into thick slices a half inch thick. Throw into kettle of boiling salted water and cook for thirty minutes until transparent. Drain, saving the water. Take a half pint of it and add a thickening of a tablespoon of butter and one of flour, salt and pepper. Take from the fire and add two beaten egg yolks and four tablespoonfuls of cream. Stew over a pan of hot water for a minute and be careful not to curdle.

* * *

BAKED ONIONS.

Peel and boil for about forty-five minutes. Dry with a cloth, squeezing the water out of them, put in a baking dish, put a small piece of butter on each and bake for an hour with a covering of buttered paper.

* * *

ONION LEFTOVERS.

Chop cold boiled onions fine, and add a little white sauce and put in a baking dish with bread crumbs over the top. Brown in the oven.

TREATMENT OF RATTLESANKE BITES.

Immediately after receiving the bite if on leg or arm, a ligature of some kind should be bound as tightly as possible between the wound and the rest of the body. A rattlesnake's bite consists of two punctures a short distance apart. A gash should be cut with a sharp knife in a line with the punctures and to their full depth, thus connecting them, and the wound should be allowed to bleed freely. If another person be present, it is well to have the wound sucked so as to draw all the venom from it. Taking the venom into the mouth momentarily and quickly ejecting it does no harm provided the person has no wounds or scratches through which the poison could find a way into the blood.

While this is being done the sufferer should be given stimulants of any kind that is convenient. Spirits of ammonia diluted in water and administered every fifteen or twenty minutes will produce good effects, and so will whiskey or other alcoholic beverage, the design being to stimulate the action of the heart. After the wound has been thoroughly drained and little or no blood comes from it, free application of spirits of ammonia, turpentine or carbolic acid should be made, for the purpose of cauterizing it.

WORTH THE COST.

The best friends of the rural mail service are the women. They derive both benefit and pleasure from it and when it is permitted to carry parcels under a parcels post law it will be an invaluable help to farmers' wives who will use it for half or the necessities the home demands.

The Farm and Floral World is right on this subject when it says:

"The rural mail service is well worth all that it costs and its extension should be hastened as circumstances will permit. The initial cost of establishing new routes will continue to be a drain on the postal revenues, perhaps, but the necessity of national development, the rural free extension cannot be questioned. As a means of national education and of delivery has proved its value, and as the system grows it will become more nearly self-supporting; and should the parcels post be established, it will be fully so. Indirectly, the service benefits trade by bringing the country into easy communication with the towns and cities, and it does a great service by increasing enlightenment, comfort and contentment in rural districts.

Mr. Newwed—I shall never, never love another woman as I love you.

Mrs. Newwed—I should hope not.

Mr. Newwed—You needn't to get so sore about it. I guess I could if I wanted to.

"Dependable Furniture at a Fair Price."

New Styles and Colorings in

Reed and Rattan Furniture

Some time ago the rattan furniture was very popular, and it is again becoming greatly in favor. The latest productions are very artistic, and on account of the different treatments and colorings they are very desirable. We have just received a large shipment of chairs, rockers, settees, steamer chairs, etc.

Some are in the natural light color, while others are in various shades of green and brown. The dark browns are very desirable for use with the Old Mission weathered oak pieces.

This furniture is all of the highest grade and is priced low. We ask you to call and see the showing.

NILES PEASE FURNITURE CO.
439-441-443 SO. SPRING ST., LOS ANGELES, CAL.

BURN AIR AND SAVE FUEL

You can do it with the
HAGUE IMPROVED DOMESTIC OIL BURNER

It burns more air than any other burner on the market. Can be fitted to stoves, ranges, furnaces, and all kinds of heating systems. Simplest and most economical burner on the market. If you want the most heat for th least money, write for information to

Hague Domestic Oil Burner Co., 810 So. Spring St., Los Angeles, Cal.

UNION BANK OF SAVINGS

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RESOURCES $3,831,680.29

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Safe Deposit Boxes from $4 yearly up.

223 South Spring St. Los Angeles, Cal.

Security Savings Bank

LARGEST SAVINGS BANK IN SO. CALIFORNIA

CAPITAL AND SURPLUS, $630,000.00.
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4%
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Write for Booklet "A" on banking by mail, also rain-fall chart.

HERMAN W. HELLMAN BUILDING, LOS ANGELES, CAL.

Climate and Crops

U. S. Department of Agriculture, Climate and Crop Bulletin of the Weather Bureau, California Section, for the week ending Monday, Jan. 23.

General Summary. Warm weather continued nearly all the week throughout the State, but with lower temperature and heavy frosts in the central and northern sections on the 20th and 21st. Heavy rain fell in all sections and there was a heavy fall of snow in the mountains. At many points rivers and creeks overflowed their banks and there were some breaks in the levees in the Sacramento Valley, causing considerable damage to grain fields, bridges and other property. All streams commenced falling slowly on the 19th.

All farm work was temporarily suspended during the storm, but plowing and seeding will be resumed as early as possible and the grain acreage materially increased as a result of the generous rains. The soil is so thoroughly saturated as to practically insure good crops. The warm weather was beneficial to grain and grass. Early grain is in fair condition in the central and northern sections and excellent in Southern California. Feed is scarce, except in the south, and cattle and sheep have suffered severely from the continued storms and lack of feed. The seasonal rainfall in Southern California is greater than last season's at this date, but elsewhere it is considerably less.

The cultivation of orchard and vineyards is progressing as rapidly as possible under the unfavorable conditions. Trees and vines are in excellent condition and the outlook for good fruit crops is considered promising. Orange picking and shipping are progressing in Southern California.

Eureka Summary.—Farming operations suspended. Grass and grain are making slow growth. Stock are in poor condition. Heavy rains overflowed streams and much bottom land was submerged, but water is rapidly receding. Considerable damage was done to property.

Los Angeles Summary.—Generous rains in all sections thoroughly soaked the earth and the soil is in fine conditions for cultivating. Grain and grass, which were at a standstill, received new life. Should warm weather follow, vegetables will make vigorous growth.

For Exchange

Walnut and Loquat trees, Gardena Dewberry and Brandywine Strawberry plants for Logans, Mammoth Blacks or Phenomenals.

Lock Box 14, Whittier, Cal.

A Sharp Razor

Makes Shaving Easy

It is a pleasure to shave when your razor is sharp. With "Every Man's Dry Hone" you can give your razor a keen cutting edge with a few strokes. It is a perfect hone, made for home use, and guaranteed to give satisfaction or money refunded. No water or oil necessary—self-lubricating. Always ready.

Mailed on receipt of $1.00. Send in your order now, while you are thinking about it. Be ready for your next shave.

REDLANDS HONE CO. 70 Orange St., Redlands, Cal.

Pacific Coast
Mines Bureau

MINING INVESTMENTS

We are fiscal agents for the Bluebelle Gold Mining and Milling Co. of California; Tonopah-Wall Street Mining Co. and Eldorado-Nevada Mining Co.

421 CHAMBER OF COMMERCE
LOS ANGELES, CAL.

The Produce Markets

Los Angeles Markets.

Los Angeles, Jan. 25, 1906.

Owing to Chinese New Year the supply of vegetables is limited and stocks are being rapidly depleted, and from now until the end of the week high prices will prevail.

Eggs are tumbling rapidly under the influence of the mild weather and heavy receipts, while poultry is scarce and in keen demand.

Butter, in the absence of green feed, remains as quoted.

Butter.

B. of T. Creamery, per roll	.70
Valley Creamery, fancy	.70
Valley Storage	.60

Cheese.

Cal. 3-℔ hand	19½
Cal. Young America	18½
California Anchor	17½
Northern	16@17
Domestic Swiss	19@20
Imported do	26½@27

Eggs.

Eggs, Fresh Ranch	27

Poultry.

Fryers, 2½ lbs	17
Broilers, under 2 lbs., per lb	18
Young Roosters, per lb	16
Hens, per lb	15
Ducks, per lb	14@15
Geese	14@15
Turkeys	19

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock:

Hogs, 200 lbs	6
Prime Steers	4
Cows	3¼
Calves, cwt	4.50
Sheep, ewes, per head	5.00
Lambs, per head	3.25
Wethers	5½

Potatoes.

Northern, per sack	$1.50@1.75
Locals, per cwt	1.10@1.25
Sweets, white, per cwt	1.00
Sweets, yellow, cwt	1.25
Sweets, red	95

Vegetables.

Onions, Australian Brown, cwt.	1.50@1.75
Onions, yellow, cwt	1.75
Garlic	7@10
Cabbage, per sack	1.00@1.15
Cauliflower, per doz	45@60
Lettuce, per doz	15@25
Bell Peppers	15
Wax Beans	15@20
String Beans	15@20
Beets	40
Green Onions, doz. bunches	15@20
Carrots, doz. bunches	40
Turnips, doz. bunches	30@40
Celery, per doz	30@40
Peas, per lb	5@6
Egg Plant	8@10
Chili Peppers, green	6½@8
Tomatoes, local	75@1.00
Parsley, per. doz. bunches	60
Summer Squash, box 20 lbs	1.25

Citrus Fruits.

Lemons, Standard	1.25@1.35
Lemons, Choice	1.75
Lemons, Fancy	2.00@2.50
Grapefruit	1.75@2.00
Seedless	3.00
Navels	1.25@1.50

Fresh Fruits.

Apples, Bellefleur	1.65@1.75
Fall Pippins	2.50@2.75
Red Pearmain	1.15@1.25
Strawberries, per crate	3.00@4.00
Guavas, per basket	9
Persimmons	4@6
Red Emperors, per lb	8@10
Pears, Winter Nellis, per lb	5
Pears, Bartlett	5@7
Pomegranates, 20 lb. box	75
Casaba Melons, large crates	2.25@2.75

Dried Fruit.

Apples, evaporated, ex ch, 10; ch, 9.

Apricots, ex ch, 11; fy, 12; ch, 10½.

Peaches, fy, 12; ch, 10.

Santa Clara Prunes, 30-40, 9c; 40-50, 7½; 50-60, 7c; 60-70, 6½.

Loose Muscatel Raisins, 2-crown 5½; 3-crown, 6; 4-crown, 6½.

Beans, Dried.

Limas	5.00@5.50
Pinks, fancy	2.50@2.65
Lady Washington	3.00@3.10
Small White	3.50@3.75
Black Eyes	5.50@6.00

Nuts.

Walnuts, No. 1, soft shell	14½
Do, No. 2	8@10
Do. No. 1, hard shells	12
Do. No. 2, hard shells	10
Almonds, paper shells,	15@16
Almonds, soft shell	14
Peanuts, California	6

Honey.

Honey, comb frames	14@15
White, strained, per lb	6½@7
Light Amber	6
Amber	5
Beeswax	27

Hay.

Barley	12@16
Alfalfa, local	13.00@13.50
Alfalfa, Northern	11.00@12.50
Wheat	13.50@14.50
Tame Oats	11@12

Grain.

Selling prices of mill stuffs f. o. b. cars L. A., in quantity, are:

Rolled Barley	1.40
Bran	1.30
Feed Corn Meal	1.55
Shorts	1.45
Wheat, per cwt	1.65@1.70
Cracked Corn	1.50
Oil Cake Meal	2.25
Cocoanut Meal	1.55

One of the finest engines on the market is that put out by the Columbus Engine Co., of Columbus, Ohio. It is not a cheap engine in any sense of the word, but it is sold at a very low price, considering the efficiency and desirability of the machine. Their Western Agency at Los Angeles under charge of Mr. D. W. Winzler, will be pleased to furnish any information desired. Write for catalogue E. Their advertisement appears on another page.

Waite, Bailey & Lynch, buy, sell, exchange, repair and install gasoline and steam engines, boilers, air compressors, power pumps, etc. Otto gasoline engines, all sizes, to 200-H. P., better built, more economical, therefore superior to all others; prices and terms that will insure due consideration. 943-945 N. Main st., Los Angeles, Calif.

San Luis Obispo County Lands. Best and Cheapest in the State. Rainfall abundant. Colony Lots, Farms, Orchards, Stock Ranches, Town Lots, Business Openings, Mines. Offices opposite R. R. Depots, Oceano and Arroyo Grande, Cal. Call or write for price list.—Beckett Realty Co.

"Pop!" "Yes, my son." "What is an excavation?" "Well, an excavation, my boy, is a place from where dirt has been taken." "Well, I suppose my face is an excavation, then."—Yonkers Statesman.

San Francisco Markets.

San Francisco, Jan. 24, 1906.

Butter.

Butter is firmer and prices for extras and firsts were advanced a fraction, supplies cleaning up well at the hardened prices. Trading on Change was quite extensive and a good buying interest was displayed throughout the open market. Cheese was firm at the appearing prices.

Fresh California extras	31½
Fresh California, firsts	29½
Fresh California, seconds	24½
Eastern extras	25½
Storage, California, extras	25½

Cheese.

California, new	15½
California firsts	14
California seconds	12½
Eastern, Cheddars	15½
Storage, California	14
Storage, Eastern	15

Eggs.

Notwithstanding a material increase in the receipts of Eggs, the arrival being the heaviest thus far this season, the market developed a firmer tone under call on Change and improved prices were quoted for all descriptions. Trading was rather cautious at the hardened rates, as considering the supplies, buyers did not believe that the advance could be sustained, and limited their orders to absolute needs.

Eggs, Fresh Ranch	28
Firsts	26½
Seconds	nominal..
California Storage	26½
Seconds	25

Poultry.

Old Roosters, per doz	4.50@5.50
Young Roosters, per doz	6.00@7.00
Hens, per doz	4.50@7.00
Ducks, per doz.	5.00@7.00
Turkeys, per lb.	16@19
Geese, per pair	2.00@2.50

Live Stock.

No. 1 Cows and Heifers are quoted at a fractional advance and calves are also higher under lighter supplies. Hogs are in sharp request and prime light and medium weight stock are quoted higher. Steers, Lambs and Sheep rule very firm at the old standard of values.

Hogs, per lb., 80 to 130 lbs	6@6¼
Hogs, per lb., 130 to 250 lbs	6¼@6¾
Hogs, per ℔., 250 to 350 ℔s	5½c.
Hogs, per ℔., rough heavy	3½@4½c.
Prime Steers, lb	7½@7¾
Cows, per lb	5½@6
Calves, lb	4¼@5
Sheep, ewes, per lb	4@4½
Lambs, per lb.	5@6
Wethers, per lb.	4½@5½

Potatoes.

River Burbanks	65@85
Oregon Burbanks	90@1.25
Salinas Burbanks	1.40@1.75
Sweets, Merced	1.00@1.25

Vegetables.

Onions, yellow, per sack	1.25@1.40
Bell Peppers	12½@15
Chili Peppers	6@7
Cucumbers, per doz.	1.00@1.50
Tomatoes, per box	1.00@1.50
Strings Beans	18@20
Wax Beans	18@20
Summer Squash, per box	1.00@1.50
Green Peas, per ℔.	8@10

Citrus Fruits.

Firm prices prevailed for Oranges yesterday under relatively light supplies, especially of the desired sizes, and the general market retained an excellent position in favor of the selling interest.

Navels, fancy	2.00@3.00
Seedlings	.75@1.00
Lemons, standard	1.50@2.50
Grapefruit	1.00@3.25
Tangerines	1.25

Fresh Fruits.

Apples were in light supply and firm at the old standard of values, red varieties ruling strong at the top quotations.

Apples, per box, extra	1.75@2.00
Apples, fancy	$1.25@1.50
Cranberries, per bbl	15@16
Grapes, per box or crate	1.00@1.25

Beans, Dried.

Limas	4.90@5.00
Pinks	2.00@2.15
Small Whites	3.15@3.25
Black Eyes	4.50@4.75
Bayos	3.50@3.75
Red Kidney	3.50@4.00
Horse Beans	1.65@1.85

Hay.

Barley, new	$8.00@11.00
Alfalfa	7.50@12.00
Wheat	11.00@16.00
Oats	7@12.50

Grain.

Wheat	$1.33½@1.36¾
Barley	1.22
Corn	1.37½
Oats	1.50@1.65
Rye	1.45@1.52
Rolled Barley, per ton	26.00@27.00
Bran, per ton,	19.50@20.50
Feed Corn Meal, per ton	20.50@30.50
Middlings ½	26@30
Cracked Corn, per ton	30@31
Oil Cake Meal, per ton	37.00
Cocoanut Cake, per ton	22.00

Hops.

Grades	8@11

CITRUS MARKETS

New York Market.

New York, Jan. 23.—Nine cars were sold at auction today. The market is slightly higher on high grades than it has been for a week past. There are fifty cars on the track and six due to arrive today.

NAVELS.

	Average
Victoria, xf, Riverside exchange	$2.65
Rose, xf, Redlands O. G. Assn.	2.55
Valentine Peyton's Fancy	2.55
Independent, xf, Highland	2.50
Antelope	2.50
Geisha, fy, J. S. Kuns Fruit Co.	2.40
California Beauty, xf, Whortley & Strong	2.40
Independent, fy, Highland	2.35
La France, ch, J. S. Kuns F. Co.	2.25
Cyril ch, J. S. Kuns F. Co.	2.20
Peacock, st, Worthley & Strong.	2.15

THOMPSON IMPROVED NAVELS.

Victoria, xf, Highland	$2.80

LEMONS.

Rialto Girl, fy, F. P. Corson	$2.25

TANGERINES.

A. J. H., xcAOIsU2Rtb.,exos5wAS

A. J. H., xc, C. C. U., Lindsay	$1.70

WELL WORTH KNOWING

Any Lump in Woman's Breast is Always Cancer.

[San Francisco Examiner]

The papers noted recently several marvelous cures of large breast cancers by Dr. Chamley, the world-renowned cancer specialist, of 25 Third St., San Francisco, Cal. This Doctor makes the bold assertion that he has in 33 years cured more cancers than any other physician living and offers $1000 if he fails. No X Ray or other swindle. A Pacific Island plant extract makes the cure in the privacy of the patient's own home. That not a dollar need be paid until cured is proof of the Doctor's honesty and fair dealing. He has the best book ever published on cancers cured without knife or pain, and proves that any lump in woman's breast is cancer, also that any tumor, lump or sore on the lip, face or anywhere six months is cancer. This book telling of thousands of wonderful cures everywhere is sent free to all who write Dr. & Mrs. Dr. Chamley & Co., describing their cases.

Philadelphia Market.

PHILADELPHIA, Jan. 23.—Eight cars sold yesterday's auction.

NAVELS.

	Average.
Unity	$1.90
Lion Head, xf, I. L. Lyons & Son	2.25
Lion Head, xf, I. L. Lyons & Son	2.10
Tiger Head, xc, I. L. Lyons & Son.	2.15
Tiger Head, xc, I. L. Lyons & Son	1.90
Blue Keystone, fy, King Fruit Co.	2.35
Red Keystone, xc, King Fruit Co.	2.10
Mocker, Or, Spence Fruit Co..	1.90
Rose, xf, Redlands O. G. Assn..	2.35
Fountain, ch, Moffat Fruit Co...	2.30
Santa Fe, st, Moffat Fruit Co...	2.05
Ocean, fy, Moffat Fruit Co.....	2.60
Camelia, xf, C. C. U,. Redlands Junction	2.05
Herald xc, C. C. U., Red Junction	1.95

THOMPSON IMPROVED NAVELS.

Blue Keystone, fy, King Fruit Co.	$2.30
Red Keystone, xc, King Fruit Co.	2.10

LEMONS.

Watchumna, O r, T. C. C. F. Ex.	$2.30
Selects, ch, San Antonio Ex.....	2.45
Meteor, st, San Antonio Ex......	2.10
Blue Bird	1.80

Foreign Lemon Sale.

NEW YORK, Jan. 23—Six thousand boxes of Sicily lemons were oferel at today's auction. The market in port. Prices realized were as follows:

Fancy 300s, $2.10@$2.30; choice 300s, $1.95@2.05; fancy 360s, $2.15@$2.35; choice 360s, $2.05@$2.15.

ACRICULTURAL EDUCATION

(Continued from First Page)

people. This is the stage of educational development in the midst of which we are today.

Naturally the movement for the remodeling of our school system to meet the requirements of industrial life had its most active development first in the cities, where the school system was most highly organized and where the very rapid increase in the extent and variety of mechanic arts and manufactures created a tremendous demand for youthful workers whose minds had been prepared to deal with the problems presented to such pursuits. Already provisions for the teaching of mechanic arts in the public high schools is made in 40 States. While in 1890 there were only 37 cities of 8,000 population and over in which manual training was taught in the public schools, in 1902 there were 270 such cities. San Francisco and Los Angeles are among this number.

The most important result of this movoment is that our leading educators now have changed ideals of education and recognize that the industrial element is an essential factor in a completely cultural education. The movement for agricultural education therefore has a sound pedagogical basis.

It is not the old trade-school which we wish to revive and make a part of our public school system. The object is not to cut out the old studies which educators agree should be included in all elementary and secondary courses, but rather by a more judicious selection of the topics to be taught in the various branches, make room for the enrichment of the public school courses by the introduction of instruction in agriculture, mechanic arts and domestic science. The elimination of useless topics and the judicious employment of the elective system in the high school, will allow agriculture to be taught in an effective way and make the atmosphere of the school room favorable to the cultivation of a love for country life.

The teacher can also now say for the encouragement of the farmer that owing largely to the work of the United States Department of Agriculture and the agricultural colleges and experiment stations in California and the other States, there is now a large body of definite knowledge which may be called the principles of agriculture. And this knowledge has been already more or less completely reduced to pedagogic form for use in various grades of schools. Elementary textbooks and books of reference on agricultural subjects are now in existence and being rapidly multiplied. Successful examples of the teaching of agriculture in the schools are already found in this and other countries.

Veterinary

BY DR. W. J. OLIVER,
318 East Second St., Los Angeles

To the end that this department may be made as valuable to the subscribers as possible, we ask observance of the following: Be sure to state in full the history of the case, location of the disease and the conditions under which the animal has been kept just before and since the disease appeared. Give your name and address, which will not appear in the paper if you so request. No charge whatever is made for such questions as are answered through the colums of the Cultivator, but when an immediate mail answer is wished Dr. Oliver asks an additional fee of $1.00 and will give immediate attention and reply by mail. In such case write Dr. W. J. Oliver, 318 E. Second St., Los Angeles, Cal.

Questions should be in by Monday to be answered in the following Friday's paper.

DOG DISTEMPER.

Editor Cultivator: I have a valuable young dog which has distemper, I think. Give treatment..—J. C., Lemon Grove.

There is a distemper vaccine, sold by all druggists, which cures as well as prevents. Ask your druggist for it.

WORMS IN PIGS.

Editor Cultivator: I have a litter of nice pigs, but in the last few days they have passed worms and begin to look stunted and weak. What can I do to clean their stomachs and intestines of worms?

Dissolve in hot water about a teaspoonful of copperas (Sulphate of iron) for each hog. Mix feed with this, so that hogs will get all the copperas. Repeat in a week. Hold up on the grain food a little for three days, until the copperas has time to work.

WARTS ON TEATS.

Editor Cultivator: I have a No. 1 Jersey cow with warts on teats which I would like to have removed. Could you give me a remedy?—J. T. McC., Healdsburg, Cal.

Smear the teats well after milking with olive oil. If this will not remove the warts touch them with a stick of lunar caustic, after cutting off with a sharp pair of scissors. Then apply pure olive oil to the sore.

RINGWORM.

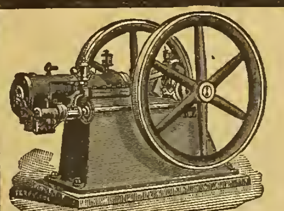
Editor Cultivator: My cattle are troubled with a white, scabby growth around their eyes, which seems to extend in the form of a ring. The cattle scratch the sores and seem to be restless, although they eat well. What can I do to cure the trouble?—H. J. W., Modesto.

I think your cattle have ringworm. Wash the parts thoroughly with one of the coal-tar products in a five per cent solution; do this daily. Sulphur and lard in the form of an ointment is oftentimes beneficial.

ABORTION.

Editor Cultivator: My neighbor has a valuable mare that has just lost her second colt about six weeks before due. We can attribute no reason whatever, as the mare is in good fix and has not been worked for two months. Can you suggest any remedy or must she be abandoned as a brood mare? Would she be any more likely to carry a mule colt the full time? Please answer through The Cultivator.—D. C. H., Carpenteria.

A mare having once aborted is likely to do so again. If you skip one year and then breed her she will carry through in all probability all right. I don't think the breeding for mule would make any difference.



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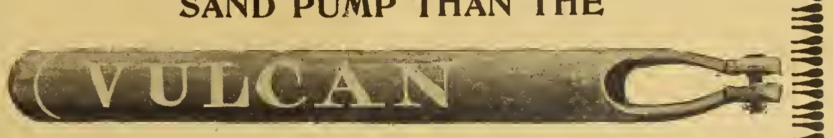

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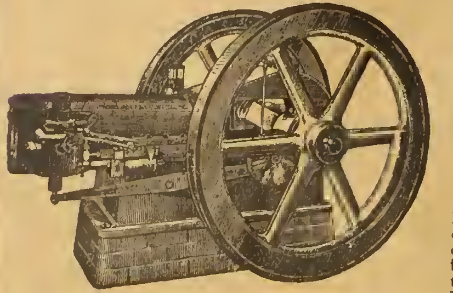

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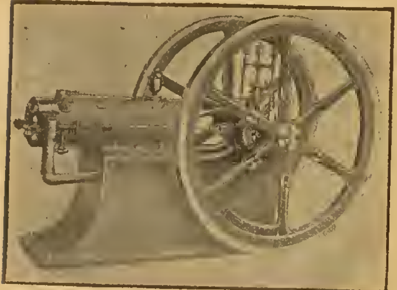

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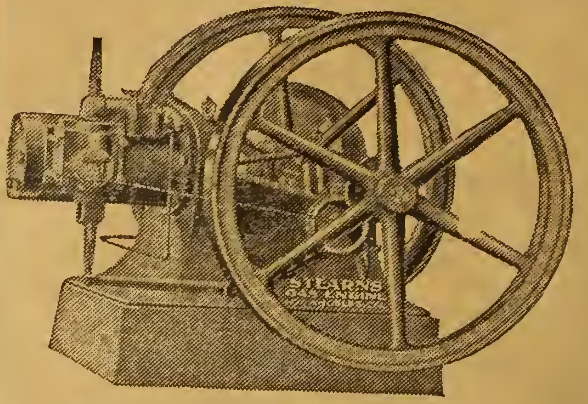

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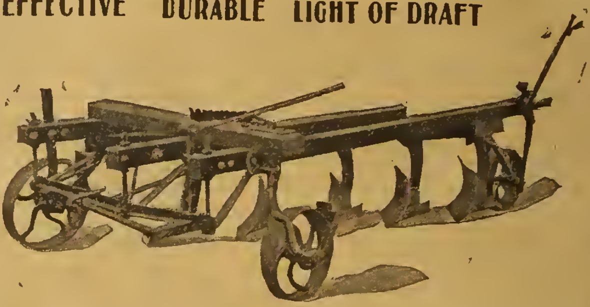

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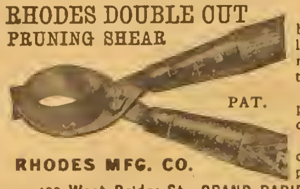

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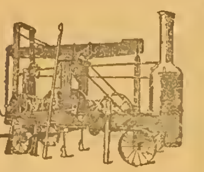

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On their own roots and grafted on Phylloxera Resistant roots. The largest stock and the most complete assortment on the Pacific Coast. Let us figure with you on your requirements. It will be worth your while.

Apples

All standard sorts, budded and grafted on whole roots. No piece roots used.

Pears

No blight in our stock. If you want the best come to us.

Cherries

We have a complete line of all the standard varieties, but the bulk of our trees consists of Royal Ann, Bing, and Black Tartarian. Any cherry grower knows how they stand in the markets, and further recommendation from us is not necessary. We have a limited number of trees on Mahaleb root.

Plums and Prunes

are again coming to the front. Prunes have paid well this year and their ready sale shows what can be done with a fruit so universally in demand, when the price is right and the quality above criticism.

Apricots Peaches Nectarines

We have a good supply of the standard sorts, but stocks are becoming depleted fast. If you contemplate planting this season put your order in now. Don't delay! This is good advice to follow.

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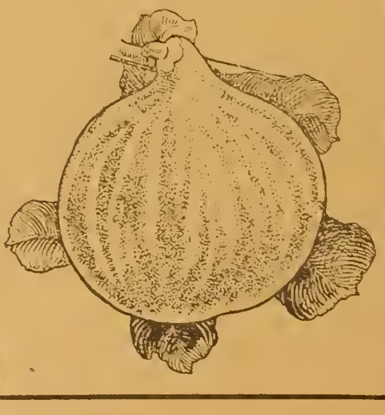

Almonds

The Hatch varieties sold for from 13c to 15c per pound this year. Better put in your order at once. The best trees always go out first.

Chestnuts Pecans Pistachio Nuts

We carry these both in grafted trees and on their own roots, in the very best varieties, of course.

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Placentia Perfection is the great money winner, selling for 18c per pound this season. We have trees on their own roots, as well as a magnificent stock grafted on California Black Walnut roots. Prices for grafted trees lower than ever before. A fine stock of all other varieties in grafted and also grown from selected seeds.

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CALIFORNIA CULTIVATOR

Vol. XXVI—No. 5 LOS ANGELES, CAL., FRIDAY, FEBRUARY 2, 1906 Subscription $1 a Year

California's Proposed New Insectary

By E. K. Carnes

The possibilities of California's proposed insectary which is to be situated on the Capitol grounds at Sacramento, are unbounded, because the climatic conditions of that particular section are peculiarly adapted to the needs of insect propagation, for there cycles of parasites can be reared in practically continuous rotation, and this means a ration of production far beyond what can possibly be obtained in sections less favored in the matter of climate where all surrounding conditions can be made as near like Nature as it will be possible for man to imitate and where our little friends who are more powerful, more persistent, more patient than we, can be propagated in large numbers and infested orchards thoroughly stocked at once with the proper parasite and the same benefits realized in a short time, that under our past and present arrangement was not possible for a considerable time.

In the face of the signal advance made along the lines of Parasitology it is no exaggeration to say that its future is all before it. The progress made so far is only a brief demonstration of the possibilities awaiting the hand of enterprise. When we consider the past success of insect control by means of their natural enemies, we cannot help but wonder that the means to create such enormous savings, to which the world today bears witness, have been allowed to to remain in unmolested security for so long a time in their native homes. As it is, the value of our "insect friends" in combatting "insect foes" is but little understood, in fact, very few of those receiving direct benefit even know of the existence of their benefactors.

We can only, in a vague manner, comprehend the mechanism of Nature or realize the power of that influence which we term Parasitism, which holds each species of insect in its proper sphere and prevents them from becoming destructive hordes of depredators, but were we to lose any of our important parasites if imported pests or even some of the partial checks of our native pests, we would very soon feel their loss and perhaps appreciate their present value.

It is a well known fact to all of our county Horticultural Commissioners, and also many of our leading growers that for many years past the only space allotted to the work of propagating insects to supply the entire State, consisting of approximately 500,000 acres, was a little 10x12 room, and in this little room there has been produced the start of our most efficient parasites in the State today, which have, in several instances, accomplished in a few years, that which has for many years past puzzled the brains of the entomological intellect from all over the world, and which pests have resisted the steady, studious and unremitting application of every known artificial means of eradication.

Who can estimate the value in dollars and cents, which has resulted directly from the introduction of beneficial insects, to the fruit industry of California, and, mark you, the source of this great benefit has been a little 10x12 room, and for several years prior to 1902 was even less, and the work of propagating these insect friends was done at odd moments in connection with the regular quarantine work of the State Commission of Horticulture.

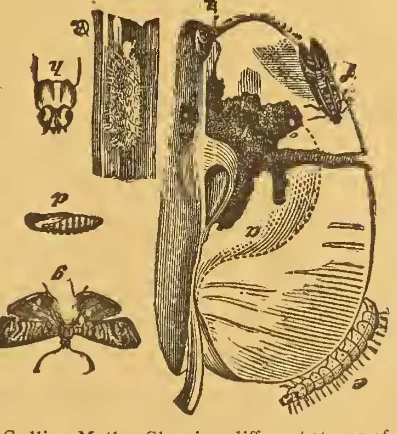
If the present status of the parasite problem has been accomplished under these conditions in the past, and enormous savings afforded the grower, who can estimate the possibilities of a separate department, with this special work as its sole object.

When an individual or community porposes to erect a building, it is presumably for a profit, or that the proposed structure will be a benefit. As we are living in a financial age, we will the treat the Insectary as an investment. In such a case, the first object is to have a desirable tenant, and therefore I will enumerate the tenants we have in view, who are now in houses of cramped quarters, simply awaiting the room to expand into untold usefulness which our present quarters or equipment will not permit.

As Sonoma county is more vitally interested in the parasite for the Codling Moth (Calliophialtes messer Gravs.) I shall therefore mention it first. The discovery and introduction of this parasite was received with joy by thousands of apple growers in every section of the State, who for years have been compelled to submit to the ravages of this terrible pest, notwithstanding the terrific warfare which has been waged against its attack, the pest has not been subdued and it has been necessary to continue the application of many vile and poisonous decoctions in order to reap a portion of the crop, for the trouble and expense of producing it, but which has been demonstrated by our scienttists to be a good investment. Yet to overcome this necessary expenditure of time and money and try to reproduce the existing conditions of certain other countries where the Codling Moth exists but is not a pest, and where it is not necessary to spray or take any artificial measure against it, to have the work performed at a cost of nothing by Nature's forces, has been the object of the introduction of this parasite.

The apple industry of California covers such an extended area that under present existing conditions, we have been able to supply only a comparitively-small percentage of the applications received. However, we have managed to place colonies in almost every apple growing section of the State, and from the reports on such colonies, we are satisfied that the parasite has come to stay and will, with the proper support, in the way of propagation and distribution do to the Codling Moth what the Vedalia cardinalis and the Scutellista cyanea have done to the Cottony Cushion and the Black scale. The growers have been somewhat impatient because we have not been able to supply any where near the applications received but when our facilities for this work have been taken into consideration, it must be acknowledged that we have done exceptionally well.

The work of rearing parasites is attended with much labor and close watching and requires a great deal of time in order to attain the best results, but at the proposed insectary we will be able to turn out parasites in large numbers, and if we can establish this one parasite in the apple orchards of our State, and, through it, hold the Codling Moth under subjection, the amount that this one parasite would save will amount to many thousands of dollars, over and above the cost of maintaining the insectary for many years.



Codling Moth.—Showing different stages of development.

There exists in Southern California in alarming numbers, two very seriuos pests of the citrus trees, viz: the Red and Purple scales, which have caused enormous loss, and their presence has made it necessary to expend lrage sums of money to resist their onslaughts and prevent their spreading to uninfested areas. For years we have heard the cry for a parasite for these two destructive pests and we now have, at the San Francisco office, a shipment of material from which we hope to rear the internal parasites for both these pests having been recently discovered and introduced by Mr. George Compere, our entomological explorer (who also found the Codling Moth parasite for us) after a perilous trip in the interior of China, where they have held these pests in subjection for years at a cost of nothing. The possibilities to the citrus industry, through these two valuable accessories to our fighting force of Nature's agents, must, therefore, be very great, and if we can subdue these two pests of the citrus and relieve the growers of the necessity of yearly spending thousands and thousands of dollars that certainly will be equivalent to a fat dividend on our investment.

These are the newest importations of beneficial insects and combined with the many that we already have and those we propose to introduce for other scale insects, the Thrip, the Vine Hopper, the Peach Borer and the Hop Louse, with the additional advantages of the insectary, where the conditions of the various forms of parasitic life may be greatly assisted and given every opportunity to increase in large numbers, will give us a force with the assistance of which we hope to eventually solve the problem of insect control, without the usual expense attending such an operation.

The work is merely in its infancy and there is much to learn before it is brought to its highest possibilities, but the growers are thoroughly awake to the individual benefit that may be derived through the application of Nature's forces in this respect and there can be no question regarding the wisdom of the action of the growers when they appealed to those in power for an appropriation that has made possible the establishment of the proposed department for our parasites, the establishment of which will enable them to outshine even their brilliant past, which will stand as a monument to our early investigators who give us the science of fighting "Bugs with Bugs," and whose intellects opened the way to secrets previously hidden from mankind and solved a problem, that man, with all his devices of destruction, was unable to cope with.

We also have many native parasites in the State that with proper aid in becoming distributed into various districts where they are needed, should add greatly to their efficiency. These can be cared for at the Insectary and properly distributed. In connection with the main Insectary we hope to enlist the support of every County Commissioner in the State and to work in conjunction with them, to establish a branch insectary in each county, under the supervision of the resident commissioner, who could draw his supplies from the main insectary and receive all consignments for distribution in his section and see that they were properly estab-

(Continued on Page 115)

Deciduous Fruit Culture

BY J. W. MILLS, POMONA, CAL.

CULTIVATING AND PRUNING.

Editor Cultivator; Will winter cultivation make such trees as apricot and peach bloom earlier? I have heard it objected that it does.

What do you consider the object in pruning?

In a nursery catalogue I received a rule for pruning peaches like this: When the trees are set out, top down about 18 inches and afterward to top the new growth about half. If we prune for a good shape, which I do, is there any benefit in all this cutting back?—G. L. H.

We do not know of an instance where the question of early blooming following winter cultivation has been thoroughly tested. It would require identical conditions with both treatments side by side to decide this point.

The objects of pruning are to force the trees to produce the maximum amount of the highest grade of fruit, protection to the trees which would consist in strengthening them by producing heavy stocky branches so as to support a heavy load and not break and to protect them from the sun which will cause scalding of the bark and the consequent rapid decline of the tree. Heavy cutting back while the tree is young will do all this. It will also prevent the tree from fruiting before it is able to mature a crop, without the grower pulling all the fruit off by hand, which he would surely have to do if he did little or no pruning. A good shape in a tree might mean several different things. One shape might be good for one thing and another shape be required for another purpose. The economy in picking friut from a low pruned tree greatly offsets the disadvantages encountered in cultivating around such trees. The advantages presented in a low pruned tree at pruning time are of considerable importance. The usual California fruit grower considers a low, dense and stocky tree, of good shape. It has to be to yield the best results. Were he an eastern grower, it might not be of good shape.

It will do to mention in connection with winter cultivation, that this is not considered good practice among California growers. Winter cultivation cuts off the current supply of humus and your soil soon becomes soggy and dead. It soon becomes difficult to work with ease and the trees do not bear as good crops. The soil will not hold its moisture so well and where irrigation is required, more water and more frequent applications will be necessary. Fertilizers will lose their effects to a greater degree. The weeds that grow in the absence of winter cultivation add humus, the life giving element, to the soil and prevent washing of the soil during storms. There are too many advantages in non-winter cultivation to seriously discuss the matter. Let the weeds grow and you have settled the question of "early blooming." It saves expense and adds profits. A point in hand came to our notice a few hours ago. A teamster came to us asking for work, saying that he always made good money with his teams during the winter, cultivating orange groves, but this year everybody planted peas in their orchards and there is no team work during the winter months.

VARIETY ORCHARD.

Editor Cultivator: I wish to set out five acres near Monrovia, to different kinds of fruit trees, early and late. Would like to have some peaches, plums, pears, persimmons, and grapes. Please advise me the best kinds to plant.—A. C. H.

For a variety of early and late peaches, plums, pears, persimmons, and table grapes, we would recommend as follows: For peaches, Dewey, Amsden's June, Yellow St. John, Large Early York, Belle of Georgia, Lewkin's Honey, Elberta, Gresham, Lovell, and Salway. These are named in the order in which they ripen except Lovell which ripens before Gresham. This will make an ideal fancy peach orchard, will keep you in peaches of good quality from June till October. For black plums, Rivers Early Prolific is the best of its class to ripen at that time, July 15th. Cherry Plum is the earliest plum of much value. Ontario is the best bearer of the Green Gage type. Tragedy is the best all round eating plum of the European type. It is slow in coming into bearing but lasts over a period of thirty to forty days and is attractive in appearance. The best Japanese plums are Wickson, Kelsey's and Sultan. The climax of our native plum as tested at the Pomona station is a late red sort that ripens in November. We received it under the name of Wayland. It never fails to set a crop with us.

Seckle, Lawson, Coles and St. Andre make a good list as tested at the Pomona station. Bartlett is fine but soon dies of the blight unless carefully handled.

Any of the Japanese persimmons listed in the nursery catalogues are good. Those described as having brown flesh are comparatively free from the astringent properties so common in the persimmon.

The best varieties of table grapes are Blue Portuguese, Chasselas Rose, Muscatello fino, Cinsaut, Olivette de Candanet, Muscat, Verdal, Napoleon, Damascus and Cipro Nero. Tokays are favorites with some and when fully ripe are rich though coarse. Golden Queen is a very prolific late grape and of good quality about November first. Cipro Nero is the best late blue grape. It is very tender and cracks badly if rained on. Purple Cornichon is a late grape that will not crack in the rain and will ship around the world.

* * *

COWPEAS.

Editor Cultivator: Will you kindly advise me through the columns of the Cultivator in regard to the planting of cow peas? How many pounds per acre should be broadcast? Is it early to plant them the latter part of January in Sonoma county near Santa Rosa? Have already planted garden peas but do not know if cow peas are as hardy as garden peas.—F. H. L., Santa Rosa.

Cow peas are not peas but beans, and will not stand any more frost than wax beans or any other garden bean. It is not safe to plant them earlier than May and then they are liable to get weather that is too cold for the best results. You will get better and more vines and peas too, if you defer planting till the ground warms up for good in the spring. Cow peas sown in July and August

(Continued on Page 155)

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BY PROF. A. J. COOK

BEET CULTURE IN GERMANY.

In two respects Germany may claim proud pre-eminence; in Analine dye production, and in the wondrous development of her beet-sugar industry. Of course our readers are not specially interested in the first, and yet so marvelous are the number, variety, and use of these coal tar products, and so wondrous is the work that German scientists have wrought in this line, that a few words are warranted. In the old days, colors, especially the "Royal purple" were very costly so that only the very rich could afford the finest colored fabrics. Today the finest colors of every conceivable hue can be had at so low a cost that one need only consult taste, not the pocketbook, in selecting his favorite colors. Even the most delicate staining materials, used by the microscopist in his intricate study of bacteria is obtained from the same coal tar and has been obtained through hard, close, marvelous researches of these same interesting Germans. The value of these discoveries, to the world is beyond computation. So astute is the German chemist, that it may be justly said he may rightly lay claim to the monopoly in this matter of Analine dye productions. In working out the brilliant and almost infinite number of colors, which are exceedingly cheap, the chemist has also discovered many other products that are hardly less important and valuable than are the dyes.

* * *

The other line of development—beet-sugar—does intimately concern us in America for we are soon to become one of the very first countries in the quantity and quality of our beet-sugar products.. California is, of course, chiefly interested in all that pertains to beet-sugar production, and so it is especially agreeable to me to pry into German ways and methods. As beet-sugar production is one of the most important industries of this great country, we are not surprised to find that the government, which is keenly alive to whatever concerns the practical interests of its people has spared no pains in fostering the most thorough and efficient research in every scientific branch that bears on the production of beet sugar.

Way up in the northern limits of Berlin, is the beet-sugar institute. It is a part of the great university, and is so widely separated only because of lack of room close about Unter den Linden. This is one of the newest colleges and research buildings in the world, and as we might expect is wonderfully fine in its style and equipment. It is in charge of Prof. Herzfeld, who takes a rank among the first beet-sugar experts of the world. In this institution, which is devoted solely to research in beet-sugar lines, and to the giving of the instruction in the same line of study and inquiry, are to be found the most able investigators and students from all parts of the world. Here every process in sugar production is scanned with the closest scrutiny of the scientists; that old methods of separation of the juice from the pulp, and of refining the product, may be improved to the very utmost. Thus it is easy to see why Germany keeps in the van in all matters relating to the production of this article. I have had several interviews with Prof. Herzfeld and his able corps of assistants, and have had the pleasure of carefully inspecting the superb plant, which is surely an honor to him and his country.

As is well known, we now purchase nearly all our beet-sugar seed from Germany. As the Germans have very carefully bred this seed, it is doubtless wise for us to use only such seed, that we may get beets of the highest sugar content. Prof. Herzfeld feels that we must always do this as he thinks we have not the requisite climatic conditions in America to enable to produce the best seed. He thinks California is too warm and that most other states are too cold and probably some have too dry an atmosphere. I wonder if this is simply opinion, born possibly of hope and patriotism, or whether it is founded on careful scientific investigations. Surely we have in America every possible condition of climate, both as to moisture and temperature, and some where we should expect to find the ideal location for beet-sugar production. If, as I believe, we produce a superior beet, as shown by its high percentage of sugar, then we may, surely hope to produce seed of like merit. As we have experiment stations in all the states, manned with able investigators, we may soon expect an opinion from them on this subject, and I shall not be surprised if it differs from that given me here.

I have also been much interested in studying the methods of culture here. As a rule they plant closer than do we, though this is gauged by the richness or condition of the soil. Where the soil is very rich and fine they plant very close. I am not surprised to learn that they cultivate very thoroughly, and plow deeply. I am told by reliable authorities that while it is not common, they do upon occasion, sometimes plow even to a depth of fifteen or twenty inches. Steam and electricty are both used on the larger places in this deep stirring of the soil. The proper thinning and weeding is never neglected, and the millowing of the soil in the early stages of growth is carefully looked after. It is considered very important to leave all the tops on the land as the beets are gathered, as it is known that the most of the fertilizing element are in the tops. Of course some of the mineral ingredients are carried off with the pulp, and as this is fed to the stock, it may be carried right back to make good its loss to the soil. Yet in many cases it goes to other lands, indeed in all cases the growers find that it pays to fertilize. I was interested to learn that in the granite soils of Germany, they often find a sufficient amount of potash, and so do not use a complete fertilizer, but use chiefly bone or rock phosphate and Chili salt petre, or soda nitrate. It is common, I learn, to use as much as 300 lbs. of the former and 500 lbs. of the latter. Surely it will be wise for us, as this matter is becoming so important in our country to carefully experiment to see if we will derive such signal advantages in the use of commercial fertilizers as they have proved to be true in the beet fields of Germany.

Of course the great question of importance is the sugar content of the beets. This year has been one of surprisingly high percentages of sugar. I understand the crop averaged eighteen per cent., and gave at the same time the large yield of twenty tons to the acre. This of course is a fine record. There is much in the seasons to influence in both the quality and quantity of the beets. I find the percentage of sugar ranges from thirteen per cent. to eighteen, and the tonnage varies between ten and twenty per cent. So it will be seen that the sugar content and the crop of the present season touched the maximum. I am told that fifteen per cent. sugar and fifteen tons to the acre are about the average.

Prof. Herzfeld has carefully investigated the worlds sugar harvest, and says that they do not wish American markets, if they can be assured of those of Europe. He thinks America will only produce her own sugar. He is more fearful of the cane product from the West Indies. Already Jamaica comes to England with a large amount. He is fearful of Cuba, in case it comes into the possession of America. He says he thinks Germany has little cause for anxiety in case the island remains independent; but under the spur of American enterprise and push he would feel that her product might become a serious menace to the interests of Germany. Surely here is a hint for the politicians of both Cuba and the United States. I wondered if Prof. Herzfeld realized the rapid increase of sugar factories in the United States and the push of our people.

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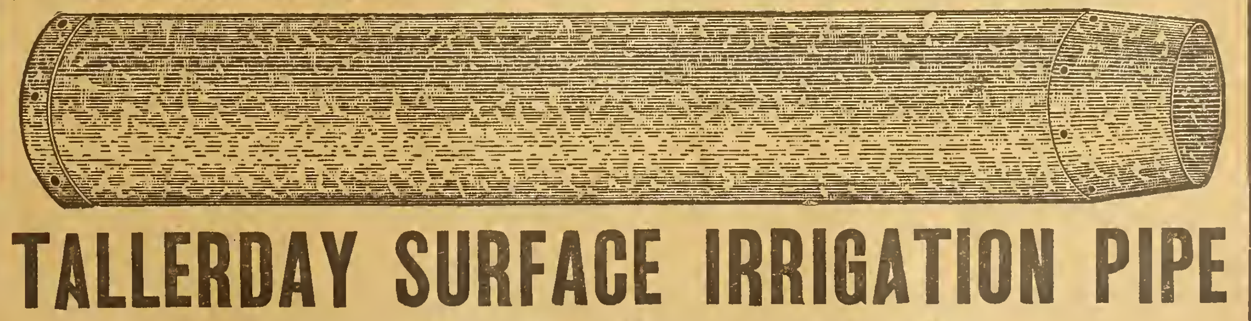

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California Horticulturally

BY JOHN ISAAC, SACRAMENTO, CAL.

THE DEPARTMENT .OF .AGRICULTURE AND CALIFORNIA

I do ont know how other states fare at the hands of the Department of Agriculture, but it would seem as though California was coming in for the lion's share of attention from Secretary Wilson. Mr. Wilson has visited our state several times and is very well informed as to its resources and possibilities and has used the efforts of his department to forward our interests. Among the many things done for us by or through Mr. Wilson, we may enumerate, the introduction and establishment of the fig insect and the making of the production of Smyrna figs here a possibility; for, while much of the credit for this work is undoubtedly due to the persevering efforts of George Roeding, nevertheless the assistance of the Department of Agriculture made possible what it was difficult for an individual to bring about. The establishment of a date experiment station on the desert is another great work for us and one which promises to open a great horticultural industry to California in the near future. The detailing of Harold Powell to instruct our fruit packers in the improved and more profitable processes of handling fruit that it may reach market in better shape, has also been a big thing for our fruit growers. The wine and grape industries have been well provided for in the work of George Hussman, who has been detailed to California in connection with this branch. The establishment of the Plant Introduction Garden at Chico, is another great thing for California, while the sending of Prof. Waite and his assistant, Prof. Scott, to take up the work of pear blight in this state, is yet another big effort in behalf of California fruit growers. These are but a part of the works which have been done for California under the direction of Secretary Wilson, and our farmers and fruit growers cannot but recognize in him a strong friend to their material interests.

* * *

TIME TO FIGHT FUNGUS DISEASES.

Last season there was much complaint as to the prevalence of apple scab, shot-hole fungus, and several other of the fungus diseases, which are often so common and so destructive of the fruit growers' profits. For some reason, there was less peach curl leaf than usual. It behooves every one who was troubled with any of these diseases last season or who even suspects that he is in any danger from them, to take precautionary measures against them at the earliest possible moment. In fighting the whole group of fungus diseases, the remedies have got to be wholly preventive and precautionary. It will not do for the orchardist to wait till the disease has made its appearance before he acts; he does not want to be sure that his trees are affected before he applies the remedies; for as soon as the disease manifests itself the damage is done and remedies are valueless. The disease which manifests itself this season comes from spores shed by last season's growth. These have found lodgment on the branches and twigs of the orchard trees and have lain dormant all winter awaiting the return of spring to awaken them into activity. As soon as the warm growing weather comes and starts the sap of the trees in motion, it also revivifies these spores which soon spring into life, but their active presence is not manifest for some time; at last however, the peach leaves curl, apples and pears crack and their leaves dry and become spotted, the apricots show the spots of the well known shot-hole fungus, and, when all this is seen, it is too late to apply any remedy. Now is the time; now, while the spores shed last season still lay dormant on the twigs, while the leaves are still all off the trees and it is possible to reach every portion with the spray. If the spraying is well done now, most of these spores will be killed and the great part of the damage be stayed, latter spraying are of course necessary, but these to get any spores which may have escaped the first application, but the first thorough spraying in the case of fungus diseases is the one which counts.

Of sprays to be recommended the salt, sulphur and lime is of course the standard winter wash, where an all around wash is desired. It is the only remedy for scales of the Aspidiotus family, to which the San Jose scale belongs, and at the same time is a most excellent remedy for fungus diseases. For fungus diseases only, the standard remedy is still the Bordeaux mixture, used full winter strength and for this we give the following formula:

Copper sulphate (bluestone) 8 lbs.; quicklime, 10 lbs.; water, 50 gallons.

Dissolve the copper sulphate in a barrel containing 10 to 12 gallons of water. Slake the quicklime and thin it to a creamy whitewash. Pour the whitewash very slowly through a wire screen into the copper solution. Stir the mixture thoroughly, and add enough water to make 50 gallons in all. Stir occasionally while applying as a spray to the trees.

In the preparation of the Bordeaux mixture it is necessary that the ingredients should be mixed in a wooden vessel. If an iron one is used the copper will go to the iron and the effect of the spray will be largely neutralized.

Apply the wash cold and as soon as possible after it is prepared. Never allow it to stand over night.

* * *

GOOD CROP PROSPECTS.

Within the past week crop conditions in the north have changed very much for the better. Up to the 11th of the present month, the outlook was a very serious one for the farmers. There had been practically no rain up to that date, for while there had been a few insignificant showers, these had been followed by drying winds until the little good they might have done was neutralized. The whole country was dry, feed was scarce and stock was suffering. In some cases it was reported that early lambs were killed to prevent them from starving. There has now been eight days of almost continuous rainfall, and the season's total has been brought almost up to the normal. The outlook for crops is now exceedingly favorable, although the season will be late.

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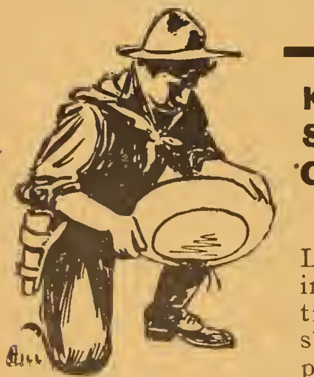

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BUDDING.

Budding should be done just as early in the season as practicable. Early buds make the best growth during the season and are in much better condition when winter comes. The tops, however, should not be cut off until the weather gets a little warm and growth is active. In budding old trees put in plenty of buds, as there can hardly be too many, and allowance must be made for failure to grow and other contingencies. As said before in these columns, get the best buds from the best type of tree with the most thrifty growth and the best character of fruit, and the result will be an orchard to be proud of.

CARE OF LARGE BUDDED CITRUS TREES.

Orange trees that have been budded during the past season will need constant attention to get the best out of the new growth. Nothing should be allowed to start except what is intended to remain on the tree. These young shoots are very persistent where the tops of old trees have been cut off and will come again and again until they form little projections which send out shoots whenever a favorable opportunity presents itself. Where these projections are very large they should be cut off with a sharp pruning knife. If the young growth on the bud gets spindling or top-heavy, cut back or pinch out the terminal bud which will cause them to grow stocky. The best results can be secured by increasing vigilance.

GOPHERED CITRUS TREES.

If citrus trees are so badly gophered as to turn their leaves yellow, they should be cut back so as to remove all of the fine branches and retain the shape of the tree. Give about 1 lb. of nitrate of soda to each tree, in a basin about four to eight foot across, according to the size of the tree; fill it up with water often enough to soak the nitrate down into the soil where most of the fibrous roots grow. Paint the barked places with a grafting wax made of one pound of mutton tallow, two pounds of beeswax and four lbs. of resin; mix well while boiling and pour into a tub of tepid water and pull until it becomes light in color. Apply it with a brush when warm. Spray the whole tree, from top to bottom with wihtewash and keep it well supplied with moisture. If the tree does not make a reasonably good start and take on a healthy color, pull it out and put in another one. Give it till after the early growing period in the spring, when it will be ample time to replace it, should it not respond.

MAKING LEMON OIL AND ESSENCES.

The lemons, according to the Midland Druggist, are taken to the laboratory and each is cut lengthwise into three slices. The pulp is first removed and put into a press where it is squeezed to obtain the lemon juice, which is sold in its natural state to the manufacturers of citrus acid. The residue of the pulp is used for animal food. The peel is put into large baskets, which are stored in a cool place for some hours when it is ready to be pressed. Each workman holds in his left hand a medium sized sponge of superior quality, which has been previously washed most carefully and thoroughly. Between the fingers of the same hand he also has small sponges to prevent the loss of any of the oil, which is very volatile.

With the right hand the workman takes a piece of peel from the basket, which is kept within easy reach, and squeezes it against the sponge, thus forcing the oil through the pores of the rind into the sponge or sponges. When the sponge is full of essence it is squeezed into a thin lined copper bowl having a lip, which every workman has before him. In order to make sure that the peel has yielded all the essence that can be pressed out by the hand, the overseer from time to time tests the rejected peel by squeezing it close to a flame. If there is any esence left it is forced through the flame and produces a flashlight. One has seen children try the same experiment with the peel after having eaten the orange This is hand-pressed peel, and is then put into brine and sold to manufacturers of candied lemon.

When the tin-lined copper bowl is full it is set aside for a short time to permit the impurities to settle, after which the bowl is surely and carefully decanted and the clear essence emptied into large tin-lined copper-vesels. Before this is put into the various sized coppers for shipment, it is passed through filtered paper. This not only perfectly purifies it, but also gives it limpidity. The quantity and quality of essence yielded by the lemon varies according to season. During November, December and January, most of the essence is manufactured about one thousand lemons being then required to make one and a half pounds of essence. Lemons not fully ripe are preferred, as they yield a larger quantity and more fragrant quality of essence than those fully matured. While a small quantity of essence is made during spring and summer, the product lacks the delicate fragrance of that made in winter.

CULTIVATION.

Towards the end of the month, and when the hardest of the rains are over, cultivation will be in order, where it is not intended to plow again, and after that cultivation at frequent intervals will be necessary to retain the moisture and give access to air and moisture in the soil.

Forest supervisor Lukens says that the Division has over 600,000 of native pine and other trees in nursery now ready for planting this year and next. A force of men are now planting in San Gabriel reserve. The recent rains will make this planting far more successful than otherwise would have been the case. The Division has nurseries at both Pasadena and at Santa Barbara, where these trees are grown under nearly the same conditions as they will be compelled to live when transplanted to the mountain side.

THE IMPERIAL VALLEY.

Five years ago the Imperial valley was a desert waste, without water, without settlement, without development of any kind. Today it gives indications of what is to come. Fully half of the valley has passed into private ownership, and is under irrigation, or is being brought under irrigation, and the remaining lands are being taken up at a rate which insures the ultimate development of the entire valley, but it may be many years before the Imperial country is fully developed.

IT'S PENNY WISE

Policy to set out a good tree, costing good money and then let the sun burn the bark, or the rabbits gnaw it when for $1.00 an acre you can get Yucca Tree Protectors that are practically indestructible. Write for free sample of the wrap. Yucca Mfg. Co., 2124 Willow St., Los Angeles.

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I have some 50,000 fine seed bed stock for sale. These plants are good color and very thrifty. Absolutely clean and healthy in every way. I will make them caliper 3-16 of an inch and up to ⅜ or ½ inch. Owing to the large size of the plants the packing will necessarily bring the price above the ordinary price of common sized plants, but they will be sold cheap, and if you intend setting it will pay you to see this stock.

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The Ornamental Garden

BY ERNEST BRAUNTON, LOS ANGELES, CAL.

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For general purposes few plants excel in usefulness Phormium termed the "Flax Lily" of New Zealand. It is hardy throughout California and thrives with a fair supply or an abundance of water though not in water entirely. It will stand alkaline soils or where the water supplied is very "brackish." Its variegated varieties are the most popular for the garden and should be more generally planted, for few plants will withstand more abuse or neglect.

THE BUNYA—BUNYA TREE.

One of the most ornate and dignified conifers we grow in California is the "bunya—bunya" (Araucaria Bidwillii.) Because of its sombre hue it should have near it trees or shrubs which will tend to lighten the landscape, and furthermore this tree is unsuited to small grounds, as at maturity it demands at least fifty square feet.

A Bunya-bunya at Stockton.

THE NATURE STUDY IDEA.

"Nature study often sets our thinking in the right direction of our daily doing. It relates the school room to the life the child is to lead. It makes the common and familiar affairs seem to be worth while. Essentially it is not an ideal for the school any more than it is for the home; but so completely do we delegate all work of teaching to the school, that nature-study effort comes to be, in practice, a school-room subject. I wish every parent as well as every professional teacher, could see the importance of first instructing the child in the very things that it is doing and the very objects that it is seeing. The ideal of the parent or the teacher should be to bring the child into sympathetic relation with its world; but whatever may be in the mind or hope of the teacher, so far as the child is concerned the nature sympathy must come as a natural effort of actual observation of definite objects and phenomena."
—L. H. Bailey.

LANGUAGE OF FLOWERS.

Edith—Do you understand the language of flowers?

Ethel—I do.

Edith—Then what does this bunch of rare orchids that Albert sent me signify?

Ethel—That a fool and his money are soon parted.—Judge.

COUNTRY SCHOOL GROUNDS.

A city school may have a beautiful building but can not have very beautiful grounds; a country school may not always have a very elegant building, but every country school can have very beautiful grounds. In spite of this fact, and in spite of the fact that the greater part of a child's most impressionable years are spent there, most of the country schools which we see are a by-word and a desolation. We have all seen them and shuddered. Fortunate are those of us who received our early education in the pitifully few ideal country schools.

There are three objects to be secured, pleasure, education and beauty; there are three methods of securing these objects, judicious selection, respectful letting alone and labor; there are three classes of persons to do this, the women, the men and the youth.

There are some neighborhoods where little is necessary, save judicious selection. There may be a place where our two acres can be secured hills possessed of natural trees and lovely views; having, withal, enough level ground for base ball. If there is such a place in the neighborhood let us select it, rejoice put in some hitching posts to save the trees, and then put our attention and labor on the school house itself. But there are many neighborhoods where there is no such place, and our two acres must be on the treeless plains. Then some labor must ensue.

In front and at the sides of the school house great variety is possible. As many trees of the native California kinds as possible should be placed here. This is not only for beauty but for education. It is said that William Hamilton Gibson when a mere boy knew all the trees of his locality, even in the winter. Not only our city but all our country boys often know few of the varieties in their state. Here is a place which can with little expense and divided labor, be made an arboretum. What if an oak will not be full grown for a hundred years? It will be educating the children who plant it and will cause our successors to rejoice in our existence.

One point seems to me very necessary. While we all believe in co-education, and while the country girl may play baseball with her brother, boys and girls should each have part of the ground sacred to themselves. Behind the school house should be a close hedge, separating the parts and thick clumps of evergreens and shrubbery, thus insuring that independence and privacy which are absolutely essential and are almost universally neglected.

But a school yard should be not only a place for the children but one for the whole neighborhood. It is not feasible in most places to have a separate park, but its school grounds may take the place of one. They should be appropriate for picnics, for Fourth of July speeches, for family outings. There should be a few garden seats. The big boys of the school can make them and would be glad to. There ought to be a box into which to throw papers or odds and ends, that even the country accumulates. The approach to the school can be made more appropriate by planting an avenue of trees.

HOW TO MAKE HOME HAPPY.

A recent purchase of a $2 palm, sickly and frail, caried in its train a demand for a $7 jardiniere and a $3 tabrette. The fire must now be kept up nights for it, and every time the owner's husband passes the palm, he shakes a fist at it.

The best school of the future will be a rural school. The country could, and in time it will, by paying for them, maintain as good schools as the cities now support, and in addition the country school will always possess certain advantages that the city school can not buy if it wants to.

THEODORE PAYNE
SEEDSMAN AND NURSERYMAN
HAS REMOVED TO
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We are the well-known seed growers who operate extensive seed farms in Santa Clara and Alameda Counties and other places in California, and we are now prepared to sell our seed in any quantity, WHOLESALE OR RETAIL. We are prepared to give you seeds of the highest quality only—seeds which grow and seeds which produce the true variety represented. The cost of the seed is a very small part of the ultimate result, whether it affects only your garden or your crop, and the best seed is always the cheapest. We have devoted a page in our catalogue to an article on "Growing Onions for Market," and if you are interested in Onions at all, it will pay you to read it. In addition to a fine assortment of the best varieties, we also offer two new Sweet Peas which will interest anyone who is fond of flowers.
If you are interested in Garden, Field or Flower Seeds of any description, it will pay you to send for our new catalogue. Simply give us your name and the catalogue will be mailed free of cost.

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In the Vegetable Garden

VALUABLE FERTILIZER.

Living near market gardeners the extensive cultivator of fowls should find ready sale at good prices for every pound of guano. In the course of a year this should amount to an item not to be overlooked. If it can be utilized at home for orchard or garden it will be found to exceed nearly all other fertilizers in those essentials to the growth of vegetation. In any event not a pound of this excreta should be allowed to go unappropriated. Keep it in a dry, cool place, if possible, until wanted.

PLANT BERRIES.

Perhaps no one can believe that there are hundreds of families on farms that never have berries on the table to give them a relish for their food and vigorous health for their work, and yet one need not visit many farms to find that there is not a strawberry plant on the place nor a blackberry or raspberry patch in any nook or corner anywhere. Is it because the plants and vines do not thrive with ordinary care as well here as in any other part of the country? Certainly not. Then it must be that these families do not like berries and would not eat them if they had acres of them. No, that is not true. They like them as well as city people, who always make it a point to have them in their season, and would not think of doing without them. If inquiry is made on such farms as to why they have no berries, the answer is invariably that they intend to plant some as soon as they get around to it.

BEETS.

Loose, rich soil with considerable sand is desirable, but beets will grow well in any except a hard, heavy clay. The seed should be planted about an inch deep in drills three and one-half feet apart. When growth has fairly begun thin to six or eight inches in the row. The plants removed may be used as greens. Turnip or globe-shaped are liked best for immediate or summer use; the long varieties for keeping. Leaf blight is occasionally troublesome in beets and may be met by spraying with Bordeaux mixture.

FRUIT FOR THE HOME LOT.

A succession of apples can be had from July to February, by planting Early Ripe, White Astrachan, Yellow Bellfleur, Stump, Brownlee's Russet, White Winter Pearmain, Mo. Peppin, and Arkansas Black. The latter is a dark red, crisp, juicy apple that will keep well.

For pears, plant Duchess d'Angouleme, Coles, Epine Dumas, St. Andre, Patrick Barry and Winter Bartlett. We do not mention Bartlett, as it is so subject to blight that it seems useless to plant it. Butt Winter and Summer Seckel are also good pears. Easter Beurre is a good late pear and is fine for cooking.

For peaches, we would recommend Yellow St. John, Pansy Pabor, Mt. Rose, Lewkin's Honey, Belle of Georgia, Elberta, Wiggins, Gresham, Lovett's White or Thistles Free (both are about the same) and Salway. Henrietta is a good yellow cling for canning. The tree is an erect grower and always bears.

For plums, select Cherry Plums, Rivers' Early Prolific, Ontario, (Green Gage type), Sultan (Blood and more prolific than Satsuma, also more tender, otherwise about the same), Wickson and Apple.

For apricots, plant Newcastle Early, and Royal or perhaps Tilton. The last is said to be superior and more prolific than Royal.

Angelique and White Datatto will supply figs from early summer till frost comes. Negro Large is a good black fig that ripens during the entire summer season, does not sour and is desirable.

For arbor grapes, plant Blue Portuguese (early black), Purple Damascus, Cipro Nero, and Golden Queen. Of the eastern grapes, Pierce, August Giant, Campbell's Early, Agwam.

For short pruners, Cinsaut (dry location only), Verdal, Olivette de Cadanet, Muscat and Black Morocco.

For small fruits, select Gardena Dewberry, Logan berry, Mammoth blackberry, Crandall and Cal. Everbearing (not Oregon Evergreen). For strawberries nothing seems to give the satisfaction in all sections that the Brandwine does, and if you wish but one it will probably do as well as any.

TOBACCO FERTILIZERS.

Potash is the chief plant food necessary to the tobacco plant, not only as a food, but to improve the leaf's burning qualities. Lime, nitrogen, and phosphoric acid are the next most important. Very strong nitrogenous soils, however, do not produce the best qualities in the leaf. A large percentage of chlorine in the soil is bad for tobacco, and will spoil its burn. For this reason, where potash manures are used, only high-grade fertilizers are best, as they contain the smallest percentage of chlorine. The best form of potash to use is the sulphate. Where the soil is rich and the texture of the leaf too coarse, this defect can be obviated by planting closer. Some cigar tobaccoes are put only a foot apart in the row, with 3 feet to 3 feet 6 inches between the rows, to allow for cultivation with the horse-hoe.

IMPORTANCE OF LETTUCE.

Lettuce is our most important salad plant and one of the most varied of our cultivated vegetables. In this country alone it is listed under more than three hundred varietal names and represents more than a hundred distinct varieties. Being in demand at all seasons of the year, it is probably grown under more varied outdoor and indoor conditions than any other vegetable. Five hundred acres, producing about 250,000 pounds of seed, are planted in California every year alone. More than 8,000 pounds of one variety have been used in a single year by one American house.

SWEET POTATOES.

The sweet potato is one of our most important vegetables. It may be cultivated in the garden for family use, or, on account of its qualities for stock feed, it may be grown profitably as a field crop. It thrives and matures in the dryest and hottest weather. Owing to its general adaptability to different soils and climate, its easiness of propagation and cultivation, it is grown, at least to some extent, at nearly every rural home of California.

The varieties are often so mixed when sent to market that the inferior ones make the selling price for the whole, consequently the real cash value of the best sweet potatoes is often not realized.

When it is considered that the difference in the cost of growing an acre is comparatively small, the fact is readily apparent that this vegetable deserves a higher place in California agriculture.

The native habitat of the sweet potato is not definitely known. It is supposed to be of American origin, but we have no authentic account of where and when it was first brought into cultivation by civilized man.

WHEN TO SMILE.

Three little rules we all should keep
To make life happy and bright—
Smile in the morning; smile at noon;
And keep on smiling at night!

GET YOUR
SEEDS AND PLANTS
FROM HEADQUARTERS
Now is the time to send in your orders. Send for our SPECIAL OFFERS on your wants, especially in
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The very best that skill and intelligent, up-to-date methods can produce. These are Kellogg's strain and have been propagated from stock that was not allowed to bear fruit. We do not plant for ourselves, nor offer for sale, plants propagated from bearing beds. Growing the fruit, and growing the plants, are two distinct operations with us.
It costs no more to fit the ground, plant and care for the best than the poorest. Visit our grounds and let us show you how vastly different is the result. We grow only Brandywines, as out of 20 varieties tested they have stood the test. From February 1st to April 1st is the best time to plant, we think. Orders will be booked and filled in the order received. One significant fact that may interest possible purchasers: We sold $1563 worth of berries from one acre of this strain of plants last year. Address
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Raisin Growers Easy.—The raisin growers in the Fresno district have disposed of their product for the past year at figures which, while not all they could wish, are yet better than had been anticipated. With their obligations all discharged and some money to their credit in the bank, the raisin growers of Central California look upon a different picture today than that which presented itself last year at this time.

* * *

Record of the Past Year.—Those who are interested in deciduous fruit growing in California can at the conclusion of any one season generally truthlly exclaim: "The past season was an unusual one," and this exclamation would certainly be entirely true as regards the one just past. No two deciduous fruit seasons in California have ever been exactly alike, and the growing and handling of the product is affected by so many different influences that are apparently far removed from here that even were the crops exactly the same, the conditions for the selling and marketing might be entirely different for the two seasons. This year in addition to the size of the crops and the different varieties of fruit being different from last year, the fruit was some three weeks earlier in ripening, and this of course, had a large bearing on that portion of the crop handled in the fresh state.

The following is a statement of the deciduous fruit shipped in a fresh state from California beginning April 22d and ending November 20, 1905. The figures are for actual carloads shipped, and not estimated ton cars. For comparative purposes I also include the shipments of 1904:

	1904.	1905.
Cherries	209	79
Apricots	97	279
Peaches	559	1946
Plums and prunes	1053	1391
Pears	2186	1013
Grapes	1451	1602
Apples	43	*1744
Quinces, persimmons, figs.	28	17
Total	5626	8071

*Shipments not finished.

* * *

More Funds Needed—The reduction of the flow of mountain streams and of springs by mountain fires has been estimated at from one quarter to three quarters what it would have been had the forest covering remained unburned on the mountain side. There have been many disastrous mountain fires in this State which have greatly reduced its producing capacity. The prevention of these fires has been a serious study with well wishers of the State and especially with those connected with the Forestry Division. Methods of preventing the fires within reasonable limits, may be known, but one serious limitation is before those in charge of this great asset of the Nation. It has been suggested that a great advantage would come to California in general, and to irrigators in particular, if the Division of Forestry of the Department of Agriculture were supplied with funds sufficient to conduct the forestry work and more properly protect this great asset of the State. The average legislator, while anxious to serve his constituents, is at the same time seldom aware of the great need of protecting the forest reserves.

To the end that this need may be impressed, and the advantage to the country appreciated, Mr. Lukens suggests that every one who sees the need of this protection of the forests of California mountains should write representatives and senators, and others at Washington, who may have influence, urging that the need of the forestry divisions be recognized and met by liberal appropriations.

The need is manifold, but principally that greater precaution against starting fires may be taken, that a stronger fighting force may be maintained, also, that more extensive planting of trees on burned over areas may be undertaken.

The recent disastrous fire in Rubio Canyon would have been far more so had not a large force of men been at hand to promptly control it and keep it within bounds, or at least from covering thousands of acres instead of the few hundreds it did cover. This large force can not be provided under the usual conditions unless more money is to be had. In this particular case the force was much larger than ordinarily at the serivce of the forest supervisor, because the property of the railroad was jeopardized to that extent that it threw a large force of workers into the fight, in addition to those in the forestry service.

May Congress see the need of the farmers of arid America and give them relief. Relief which will not only be appreciated by the present constituents of the Senators and Representatives, but which will place them in a position where the next generation shall rise up and call them blessed.

State Text Book Committee.—The public generally does not understand that the State Text Book Committee created by act of law, controls the school books which are used in our public schools. Its decisions are mandatory, therefore, it plays a most important part in the educational advancment of the tSate.

"It devolves upon this committee, says the Sacramento Union, to determine what text books will be used, and to prepare these books either from original writings or from extracts taken from other and standard works. The questions of copyright and of royalties are therefore very numerous, while the possession of sound educational judgment and experience are prime necessities. The State Text-Book Committee is a department of the State Board of Public Instruction, and makes its reports to that board. At the same time it has a statutory existence of its own."

Whether it is wise to invest authority of such unlimited character upon a committee has been the subject of debate in several states where the experiment has been tried, and it is an open question if the giving of such authority does not open the door to graft, for time and time again have changes been made and sometimes proven, too, that local boards of education have profited by the commissions paid them to adopt certain text books for use in the schools over which they have authority. But while such cases are not numerous, they have been serious and have caused the legislatures of many states to turn down a proposition to put the selection of the text books for schools in the hands of a committee.

A glance at some of the statistics furnished by the State Text-Book Commission shows at once the extensive nature of the interests involved. It also shows how rapid has been the educational growth of the State. In 1899, for instance, the total number of books issued was 192,610, of a value of $72,866. These are large figures, but they are entirely dwarfed by those that have followed in recent years. In 1902 the number of books issued had risen to 208,915, of a value of $81,769, while last year the number of books issued was 407,727, of a value of $210, 878.

The book that last year commanded the most extensive sale was the grammar school arithmetic. Of this 93,431 were sold for a sum of $46,710. Next came the intermediate geography with a sale of 69, 048 and this was nearly equaled by the grammar school geography with a circulation of 53,867.

The Cultivator trusts that the Text-Book Committee of California may ever keep before it as of most vital importance, the great responsibility it is under to the school children of the State, and be guided by the highest ambitions which educators should always feel to render the best public service within its power.

* * *

Cannot Do Without It.—The farmers of this country have learned, in the past few yars, the value of the rural free delivery of mails. They have ascertained its value in a dozen different ways and although it has cost on the average a loss to the government of $12,000,000, it has resulted in bringing agriculture to a position of independence never before enjoyed. The fact is it has become indispensible to the rural districts and we never expect to see its use discontinued. Some talk has been indulged in to the effect that the government can not stand the deficit the rural mail creates and that it ought to be discontinued. Our opinion is that should such a bill be introduced in Congress the farmers would rise up in open revolution against it and every congressman who lent his support to the measure would go down in defeat at his next running.

* * *

Farmers' National Congress.—The 1906 session of the Farmers' National Congress will open at Rockford, Tex., October 9th.

At the 1905 session held in Richmond, Va., eighteen resolutions were adopted. They favor any additional legislation which may be necessary to prevent railroads from giving special favors; popular election of United States senators; a parcels post; government aid in suppressing Texas fever in cattle; further regulation of irrigation; national aid for good roads; reciprocal tariff relations; increased appropriation for the Farmers Institute division of the national department of agriculture; and a recommendation that the states not already doing so make liberal appropriations for local institutes; removing the tax on alcohol used for fuel, light and mechanical purposes; a national income tax; increased appropriations for the experiment stations.

* * *

Women at Institutes.—The editor of this paper has been glad to witness the presence of so many women at the Farmers' Institutes this season. It argues well for the interest of these meetings that women grace them with their presence. They listen to the discussion of the instructors, themselves ask questions and often impart information on dairy, poultry, garden and flower topics which are vitally suggestive to the discussion in

We have often wondered why domestic science is not coupled with other topics and a session given over to culinary matters. Nothing would insure an attendance of women like an afternoon devoted to home making in all its departments.

In many sections of the Middle West the fact for years, has been recognized, that woman has her part on the farm just as much as a man and nearly all Farmers' Institutes have given topics of special interest to woman a place on their programs, and many have what are known as woman's sessions. Doubtless these sessions are just as interesting and beneficial to the wife as the regular sessions are to the husband.

The Farmers' Institutes makes a strong plea along this same line urging the expedience of woman's sessions at Institutes as a certain force to create enthusiasism and interest in the work in hand.

"As a rule, farmers' wives stay closely at home, hence it is well that during the slack season they should take this way of meeting together. It does women good to meet together and in this dignified manner tell their experiences, their methods and their plans. The less successful may learn where they have made their mistakes and the stronger gain strength by the telling of their successes. Young mothers have need for the experience and advice of those who have brought up families. Domestic questions always create interest and spread new ideas, while literary questions prove enjoyable. It is nice to have persons who have made special study along different lines give papers or addresses that the benefit of their study may be given to others. The state college sends representatives to give lectures and demonstrations on subjects which are beneficial and interesting to the farmers' wives."

In some communities, as for example, in parts of Iowa, specimens of cookery are exhibited and prizes awarded. This may be a good feature in helping to arouse interest. Public questions are sometimes discussed and this helps in forming good public opinion which is such an important factor today. Townships or localities often work together and a spirit of rivalry is created which induces each individual to work to the best of his or her ability—this spirit is the secret of advancement. When the true object of woman's sessions is understood, they will surely be more common and even become necessary.

NEWS OF COUNTRY LIFE IN THE GOLDEN WEST

HORTICULTURE.

The Fresno Republican announces that it has closed its columns against Theo Kearney and W. S. Goodfellow on the raisin controversy.

The Board of Supervisors of San Bernardino county have requested Commissioner Holbbrook to resign. He declines to do so, and the Ontario Record says he is right.

The Pajaronian of Watsonville records the fact of one fruit packing firm that received $123.44 for 59 boxes of Pajaro Valley Newton Pippins, sold in Germany. This was a net of about $2.10 per box.

P. W. Morse, of the P. W. Morse Company of Watsonville, has received a gold medal diploma for three varieties of Pajaro valley strawberries—Malindas, Brandywines and Longsworths—exhibited by him at the World's Fair in St. Louis.

Governor Pardee has received a letter from John Tuohy, a prominent citizen of Tulare county, telling him that in a few days a large petition will be sent to the State Commissioner of Horticulture asking for a State quarantine ordinance prohibiting the importation of grape vines and cuttings into Tulare county.

The orange and olive trees of Mount Madonna are now full of fruit, says the Gilroy Advocate. The crop of olives is large and of fine quality. There is a splendid lot of apple trees of many varieties and the bark of all is as clean as a new pin. The fruit of Mount Madonna is all first class, of good flavor and size and the showing leads to the conclusion that there is no better fruit land in the State than on the summit and slopes of the Santa Cruz range.

T. Harold Powell, pomologist in charge of fruit transportation and storage, United States department of Agriculture has been delegated by the department to continue in California the investigation of the factors which influence the carrying quality of citrus fruit in transportation. The Enterprise says he will make his home at Riverside and his work will be a continuation of that begun on January 1 of last year, and continued till the middle of last June. Last year it was ascertained by preliminary investigation that a considerable proportion of the losses in transit was due to the bruising of fruit from various causes before it is packed for shipment. Mr. Powell accomplished much good by his work last year.

AGRICULTURE.

At the last meeting of the Exeter Lindsay Cantaloupe Association it was decided to order six hundred pounds of the seeds. The association expects to do a very large business this year.

It reads rather peculiar to an easterner when he sees such an item as this reported in the Brawley News. "Harvesting the corn crop is rapidly progressing. The yield of corn is excellent, averaging a ton an acre, with threshed grain selling at $20 a ton. There is considerable corn in No. 8 and No. 5, but owing to the lack of bridges information on the crop in those districts is meager."

Dun's Review for December 1905 says of the value of crops in Southern California: "The estimated value of hay and grain crops totals about $16,000,000. Citrus fruits, $18,000,000. One of the best features of the agricultural development was along the line of market gardening and increased trade in winter vegetables with the Middle West, the value of garden truck sent forward approximating $2,000,000. This includes celery which is now being rapidly shipped."

The 1906 session of Farmers' National Congress will be held early in October in Rock Island, Ill. This beautiful busy city is 180 miles westerly of Chicago, on the Mississippi river. Across the stream is Davenport, Iowa, another place of great interest. The locality is one of much agricultural importance, admirably adapted for the holding of a national farmers' congress. Reduced railroad rates are assured and there should be excursions from all parts of the country to Rock Island October 9. George M. Whitaker, P. O. Box 1332, Boston, Mass., Secretary.

MISCELLANEOUS.

Paso Robbles is to have a bath house costing $100,000.

Monrovia has purchased a fine building for a city hall.

Lindsay is to have a $30,000 hotel. Lindsay is to be congratulated.

Hanford will establish a society for the prevention of cruelty to animals and children. Good.

The citizens of Lindsay are up in arms because of the prospect of a saloon being established in that town.

A convention of newspaper men of the San Joaquin valley has been called to meet in Visalia on Saturday, February 3rd.

The work of laying the last six miles of the Northern Electric between Chico and Oroville has been commenced.

Wednesday, February 7, has been set by the Board of Supervisors as the date for holding an election to decide the question of incorporation for Glendale.

Louis J. Wilde has purchased eighteen acres of land near National City and will endeavor to demonstrate the feasibility of practical silk farming in San Diego county.

The labor troubles in Santa Rosa have been settled by compromise. The terms of the peace agreement would seem to indicate that the labor unions have got it in the neck.—Republican.

The big sawmill of the Diamond Match Company at Stirling City, which was compelled to shut down owing to the bad weather the first of the month, has resumed operations.

Says the Hollister Free Lance: The recent storm has been of inestimable benefit to the orchard and alfalfa farmers of this section. Prospects for a season of plenty were never better.

The Hanford Journal has issued a special edition for immigration purposes, and it contains a very comprehensive presentation of the resources of Kings county. The Journal is a fine paper, always up to date.

The Oxnard Courier says, California and more particularly this section of it, has never had a more prosperous outlook for a prosperous year.

Californians are ruthlessly impairing their magnificient climate by destroying their magnificent forest growth, while 600 Texas farmers have formed a club to plant trees on the Staked Plains.—Sonoma County Farmer.

The concrete and earthen dam of Dr. Roca at San Felipe, which was built at a cost of $40,000 was washed out. The San Felipe and tributary creeks are higher than they have been in six years.

It is said that there is enough natural gas escaping from the oil wells in Brea Canyon, southwest of Chino, to supply a dozen cities. The owners of the property have made a proposition to supply Fullerton with the gas.—Chino Champion.

Pomona is forging ahead with civic improvements to the admiration of the entire county. Landscape gardeners are beautifying public and private grounds, the streets are being oiled, trees planted and property has gone up 25 per cent. as a result of the energy displayed by the people.

Sugar eaters and local stockholders in eastern sugar companies are agitated over a gaint combine in sugar about to be effected. It is claimed the Standard Oil people are to be the controllers of the sugar market. This would affect the beet sugar industry and sugar prices in general.

The Boulder Creek Echo is authority for the statement that the recent storm beginning January 11 and concluding January 19, was the heaviest ever experienced there in the same length of time. The total precipitation for the season is 34.72 inches, as against 30.08 inches to the same date last season.

The Kern County Land Company and all the allied canal companies today filed a suit against the Associated Oil Company and each and every oil company operating in the Kern River field and judgment is asked to take such measures as will protect the river from the accumulated and waste oil that now or may find it way to the river.

The entire California delegation has had a conference with Percy T. Morgan, president of California Wine Association, regarding the proposed amendments to the existing laws regulating the sweet wine industry. It is now proposed to press a bill for the amendment of the law, so as to relieve wineries from the income tax now imposed.

A new way of exterminating gophers has been officially published by the government of France. By the use of a certain virus, a disease similar to typhoid fever is communicated to the animals. The disease is very contagious and 95 per cent of the pests die within two weeks. The cost of extermination is put at 40 cents an acre and the work is done in the spring.

A whale measuring some 20 feet in width and 75 feet in length landed ashore on the beach about half a mile north of the wharf at Port Harford quite recently. The monster is the largest ever seen in this section For over three hours inhabitants in the port watched the hugh object as it floated around in the bay, until it finally beached. Fishermen have made it fast to the rocks with long ropes.

LIVE STOCK.

The Fresno Poultry, Pigeon and Pet Stock Association has selected December 12 to 15th, 1906 as the date for holding their annual show.

San Luis Obispo County stockmen are forming an association to purchase several carloads of Hereford cattle with high grade bulls to bring up the character of stock in that county.

The Dairymen in Sonoma County have agreed to put their dairies in first class condition so that the milk inspectors may not be able to condemn their milk on account of excess of bacteria.

The buildings of the Pocket Creamery a few miles below Sacramento were burned last week. The plant was of the most modern type and capable of the maximum production with the minimum of labor and expense.

A dispatch from Anderson says: "The season at the Battle Creek Fishery has about closed. There are still 10,000,000 salmon eggs on hand, part of which are being shipped to the Sisson Hatchery, 1,500,000 being shipped at one time."

In Kings County a movement is on foot to ship in several hundred high-grade Hereford heifers with a view of starting a new class of beef cattle on the Coast. These cattle, as is known, are great rustlers and fatten on less stuff than any other type of beef stock.

The largest striped bass ever taken from the Sacramento in this vicinity and very likely the largest ever taken from that stream, was landed Thursday afternoon by Sam Neal. The fish measured three feet and weighed just sixteen pounds and netted Mr. Neal $1.50.—Colusa Sun.

The Ukiah Times has the following item concerning stock conditions in Mendocino county: "The winter is proving a very hard one on stock. Most of the farmers have fed out all their hay and there is no grass on the ranges. There is sure to be a great loss in both sheep and cattle.

The statement has recently been made by the Napa Journal that the hens' eggs produced annually in this country would fill 43,127,000 crates of the capacity of 360 eggs each, and that a train made up of the refrigerator cars necessary to carry them would be nine hundred miles long.

The Orange News states that the Orange County French Coach Horse Company recently received from France the coach stallion "Coraim." This fine horse is a rich mahogany bay, four years old next May, and weighs 1,450 pounds. He arrived from France about two months ago. The price paid for him was $3,600.

The Sonoma County Co-operative Poultry Association awarded the contract for purchasing its eggs for 1906 to the Sonoma Fruit and Produce Company. The price at which the eggs are sold are top exchange quotations for No. 1 eggs, less 5 per cent commission and top quotations for No. 2 eggs, less 5 cents per dozen, without commission. The minimum price for eggs during the cold storage season is fixed at 18 cents. This is much better than the price obtained under the contract of the previous year.—Sonoma Farmer.

Some recent tests of Holstein-Freisian cows resulted as follows: Rosa Bonheur Fifth, in a six weeks' test produced 135.95 pounds of butter, or a daily average of 3.23 pounds. Belle Sarcastic, in a six weeks' test, produced 136.88 pounds, or a daily average of 3.26 pounds. Houtwje D., in a six weeks' test made 120.65 pounds of butter, or a daily average of 2.87 pounds. It will thus be seen that these three cows made an average of three and twelve hundredths pounds of butter per day for a period of six consecutive weeks, or fifty-five one hundredths of a pound of butter per cow per day in excess of the best cow at the World's Fair.

SUCCESS ASSURED.

No objections raised by individual Congressmen or Senators can permanently check the progress of the great movement for national irrigation. It has got beyond that stage. The purposes of the movement are now too well understood by the people, the press, and by many enlightened members of Congress for its progress to be permanently blocked. The success of a movement that is so desirable, so reasonable, and so profitable to the nation at large, is only a question of time—and of a very short time.—L. A. Times.

Pomona will soon become the most beautiful city in Southern California. The money spent in fine schools, beautiful parks, well graded and shapely streets and avenues will bear good interest in the constantly increasing stream of home seekers who are hunting the right place in which to locate.

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Live Stock and the Dairy

BY MRS. MINNA E. SHERMAN, FRESNO, CAL.

LUMPY MILK.

Editor Cultivator: I have a cow, half Holstein, half Jersey from whose cream we are unable to make any butter. I bought her about four months ago (she was then some three months with calf) and we made then as nice yellow butter as if she had been a full Jersey, but pretty soon her cream became foam when churning it, so that if we put a gallon of cream in a 3 gallon churn and churned it some 15 or 20 minutes the churn got full with a white foam resembling beaten whites of eggs, and did not make any difference how long a time we churned it would remain that way and nothing else. We use a churning thermometer and we have tried all kinds of preparations but the result is the same. She is now two months from calving and I notice the closer she gets to that period the lumpier the milk becomes, so that it is now impossible to strain it any more because the strainer gets clogged up with small yellow slimy lumps. I also noticed a day or two ago that the first milk coming from her fore teats is lumpy. My neighbor has a full blooded Jersey cow who has the same disease as mine, only he claims his has small pimples or sores on her udder while mine is perpectly healthy externally as far as I know. I bought the cow with the understanding that I can trade her for another one when she is fresh, but if I can find some remedy for this I prefer to keep her as she is a heavy milker when fresh.—J. B., Chico.

Give your cow twice a week or oftener if necessary, a pound of Epsom salts with a tablespoonful of ginger as a drench, use water liberally with it to have the full cleansing action. The cause at first may have been a slight cold, but more than likely the cold mornings may have caused the milker to hurry too fast and not milk the cow clean. Then the low temperature gave the bad bacteria every chance to work into a mass in the milk. While the friendly little lactic acid bacterium was killed by the coldness, now if this condition cannot be controlled warm the newly drawn milk by adding hot water at a temperature of 100 in pans that are also warm, set the milk in a cool room and skim as quickly as the milk clabbers, from this on follow the directions given to J. M. P. It may be well to dry this cow off at once and when she comes fresh she should be lightly milked for the first twenty-four hours, only as much being drawn as the calf would take and at three or four intervals during the first two days, she is the kind of cow that one fears will have milk fever.

In regard to the sore teats of the neighbor's cow, this is probably cow pox, and each spot can be touched with butter of antimony, after milking and washed off before milking again. We use in our herd castor oil or carbolized vaseline, except in severe cases, then the butter of antimony usually two or three applications ends the trouble; if the teats are very sore a milking tube is humane.

* * *

MILK PLETHORA.

Editor Cultivator: Have a mare ten years old. She is with foal; will be ten months the 23rd of Jan. Has made bag a month or more; it is just bursting with milk, and at times it flows from the bag. She is fat and eats well, will you please tell me the cause of this flow of milk? Will the mare lose her foal.—F. H. B., Tulare.

In mares the ninth month is not a dangerous point as a rule, though injury may cause loss of foal. The milk flow in this case seems to be from plethora, the result of over-feeding and probably lack or exercise. Reduce the hay feed to twice a day and limit the quantity; give a little bran; enough to keep the bowels open. Give her daily exercise, either light work, or else a mile walk in harness or behind a wagon; let it be slow, and on even footing. We have had several cases among our draft mares and have not had bad results from the early filling of the bag, only watch it and do not let it abcess, but milk it out occassionally.

* * *

RANCID BUTTER.

Editor Cultivator: Please state why butter becomes rancid in twelve hours after being churned from fresh cream.

The family cow seems to be in perfect health and is fed bran and barley twice a day, night and morning, the rest of the time she is on green pasture which consists of green grass only.—J. M. P., Lakeside, Cal.

The trouble you are having is not uncommon during this period of the year in California. Try setting the milk in pans that are warmed and have a pint of warm, not hot water in them, after straining the milk into the pans put them in a cool room. This is the well known plan that many of the farm dilution separators work upon. Skim the milk as soon as the clabber forms. Stir the cream thoroughly when adding each new lot, and churn twice a week; if the cream will not hold that long it can be kept back by adding a little salt to the first lot put into the jar. The night before churning time, examine the cream; it should be slightly acid and look smooth, if it is still sweet, warm it up to eighty degrees by putting the cream jar in a pan of warm water, then cover and stand it where it will cool slowly. Now, before beginning in this way, it would be well to have a general cleanup to destroy the bad bacteria that are now in control, wash everything used, the tinware should be scalded and washed with strong sal soda water, then with scalding, it should be free; the churning and wooden things are washed, and have a weaker solution of soda used. After that use some lime water to soak them in for a while. This may seem considerable trouble yet I have found no royal way to do things in a dairy only to keep eternally at it, in the way of keeping the bacteria at bay.

DRYING UP THE COW.

Editor Cultivator: Will you give me some suggestions along the line of drying up my Jersey cow? She is now within sixty days of dropping her calf and the flow of her milk increases, if anything; some times showing a ropy symptom. She is a high priced cow and I am worrying about her refusal to dry up. She is thin, of course, but healthy.

This is a difficult question to answer briefly, for so many things enter into the problem that a newspaper reply is necessarily unsatisfactory. There are a few general suggestions, however, which may be made to all such cases, but to specific ones we would advise writing Mrs. M. E. Sherman, Fresno, the Cultivator's dairy editress, who is the best authority we know of on this subject. But along the general line of discussion it may be said:

"The more highly developed the dairy cow becomes the more important is it to give her more consideration at the close of the lactation period. Frequently a cow is supposed to be thoroughly dry, and turned out into the dry pasture when she should be kept with the cows that are giving milk, and until all secretions in the udder have stopped. It is a mistake to permit the udder to retain any thick, mattery substance; for, undoubtedly many cases of udder trouble can be traced to not removing this substance from the udder. Moreover, it is not well for the animal to absorb this material into her system.

Occasionally, there are cows that persist in giving milk for two or three years without any rest periods of lactation. In such a case, it is better not to force her dry but continue milking. If a cow is forced dry there is danger of desrtoying a portion or all, of the udder.

About three months from calving time most cows begin to decrease in milk flow rather rapidly, without de-

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Eighteen Centrally Located Distributing Warehouses throughout the United States and Canada 427

Prompt Delivery Assured California Customers from San Francisco warehouse No delays. Address all letters to Bellows Falls, Vt

creasing their grain allowance, while others will go dry only when the grain portion of their ration is reduced and some milk left in the udder after each milking.

It is not the poor dairy cow that gives us any anxiety at this time, but it is the heavy milking animal whose udder we wish to preserve that makes us inquire as to the best method to pursue. There can be no hard or fast rules laid down for the feeding and handling of the cow at this time, but, as a rule, a decrease in the grain allowance usually is effective in reducing her flow of milk. If the cow is thin in flesh, it is seldom necessary to make any change in the system of feeding, but her milk flow can be reduced by leaving a small amount of milk in her udder after each milking, and after pursuing this method for a week, milking the cow once a day is usually sufficient.

Of course, a great deal depends upon the cow, and the system pursued in drying her off should be modified according to circumstances. The cow should be dry from six weeks to two months, and it should not take longer than two weeks to thoroughly dry the cow up, but under any condition, all, or nearly all,, of the udder secretions should have ceased before she is turned out to receive no more attention. It will not stimulate the flow of milk to remove all substance from the udder when she is nearly dry. If she is thin in flesh she should be well fed until she is in good condition for her next year's work.

"Hobbs, I think your boy will become a very distinguished man if he lives long enough."

"Yes? And what do you think he will be distinguished for?"

"Longevity—if he lives long enough."—Tid-Bits.

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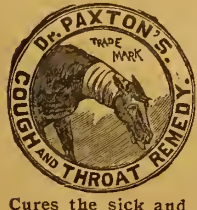
Won 25 ribbons, 2 Gold and 2 Silver Medals at State Fair at Sacramento, Cal., in 1904. The great imported boars, Chief Guy and Ohio's Chief, at head of herd. Also Black Minorca chicken eggs in season. Stock for sale, also bred sows. W. R. McCASLIN & SON, Walsh Station, Sacramento County, Cal.



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EARLY DAYS WITH STOCK.

The pioneers, men who were identified with California in its early days, say from '49 to '80, are rapidly passing away. Some of "the boys" of those days are past the meridian of youth now and the stories they tell of the incidents in the formation period of California are interesting reading to the present residents, native and, otherwise, of the State.

One of the men who knew much about California in the days mentioned was J. E. Pleasants, of Orange county who relates in the Citrograph how they raised horses in this country 50 years ago. He writes:

"From the settling of California by the Spanish to 1863 the principal industry of the country was stock raising, chiefly horses and cattle, as up to that date sheep were raised in comparatively small numbers. The horses were generally understood to be of Andalusian stock, introduced from Spain into Mexico and thence to California. The horses of California were superior to those of Mexico, probably owing to the difference in climate and feed. It has since been proven that in the rearing of blooded horses that California climate is a strong factor in making the bone and muscle necessary to the speed and endurance required to compete with the world's record breakers. And for beauty, spirit and endurance, I have never seen the old California horses surpassed, even by blooded stock. I have know many a horse to be ridden a hundred miles a day without injury, and fed entirely upon wild grass. Indeed, I belive that the horses fed entirely upon the native grasses possessed greater endurance than those fed on grain. Their hoofs possesed great durability. Saddle horses were never shod, and suffered nothing in consequence. The greatest care was taken in breaking and training the saddle horses. There has probably never been better trained or more beautiful saddle horses in any country than those of California at that time. The work and travel of the country was done on horseback; so the saddle horse was an institution. All the men and many of the women were expert riders. The horse and all the equipments of the horseman were matters of especial pride. It was usually considered that it required a year's time to properly bit a horse. Then a mere touch of the rein served to guide him. The shades of color and markings of stock all had their names. It has been estimated that the Spanish language contains at least two hundred names for the colors of stock. There are many colors for which we have no synonyms in English.

During the early sixties there was more stock in the country than had ever been at any previous time. The Stearns ranchos alone at that time branded from 5000 to 6000 head of calves a year; and many rancheros counted their yearly increase by the thousand.

Nearly the whole of the southern part of the state was used as grazing land. Around Los Angeles, the missions, and along the rivers there was a limited amount of farming and fruit raising done, but the balance of the land was one great pasture. The old method of managing stock was very systematic, though done on a large scale. Each rancho had its mayordomo, and under him served a corporal. Then came the regular vaqueros, who numbered from ten to twenty for each rancho, according to the size of the place and number of stock to be handled. During the spring rodeos there would be twice that number employed. The business of the vaquero was to look after the stock and break saddle horses. As a rule, this work was light and his wages small. Fifteen dollars a month was about the average. Each vaquero had his own caballos de su silla, or saddle horses, allotted to him, and no man rode another's horse. Enough horses were allotted to one man to make the work light for the animals. A horse was never ridden two days in succession during the busy season, and one usually had several days of rest to one of work. In this way they were kept in excellent condition the season through. Horses were kept in separate bands. A manada or band of mares and quite young stock, would usually number from forty to sixty. These would be under the leadership of a stallion. Each horse would keep his manada to itself, and while they usually avoided each other, when two old leaders did meet there would be a fight worth seeing. The young geldings and fillies remained with the manada until the fillies were 2 to 3 years old and the geldings 3 to 4.

The fillies were put at the proper age into a newly formed manada; and the geldings were taken away to be broken. Mares were never used to work or ride. In the spring the young horses (potros) were put into a band by themselves under the leadership of a bell mare (caponera). They were herded for a time until they grew accustomed to the new leader. They were now apportioned out among the vaqueros for breaking, each man taking a number, riding and gentling them in turn. They were also broken to stake. Broncos (wild horses) were ridden for some time with a hacima, a sort of halter, before using the bit. Quite strict observance of ranch lines was kept. The boundaries were well defined and recognized; and though the stock roamed frequently from one rancho to another, one ranchero or his men must obtain permission from the owner before driving stock away from his land. In the spring, varying in time with the season, came the rodeos, or round-ups. There were never begun until feed was plentiful and the stock in good condition.

UP-TO-DATE CATTLE RAISING.

Henry Miller is the greatest cattle raiser in California, a man whose ranches extend from the Tehachapi to Oregon, and who cannot tell how man cattle he has, even it he did want to help out the assessor. There is hardly an old cowboy in California who has not worked for Miller and Lux. Jim rode for them when he was a boy, and he would rather "take a cussing" from Old Henry Miller than ride for the politest cattleman in the San Joaquin. But if Miller and Lux trained the old school of California cowboys on the open plains, they also, with their barbed wire fences, and branding chutes, did their part to change the rope-swinging cowboy into a hired man. Henry Miller noticed that after a grown steer had been roped and "busted" he would get rough, and perhaps lose weight for a month; and as Mr. Miller's object is to fatten his cattle, he is reported to be willing to fire any man who puts a rope on one of his critters except to drag him out of an alkali hole. With this sentiment abroad, you will find no steer-tying contests in California; and, for that matter, the sport is none too popular among the cattle owners of New Mexico and Arizona. —Dan Coolidge in Sunset Magazine for January.

FEED ALFALFA.

Editor Cultivator: Please inform me in your next issue what I can do to keep horses from gnawing the bark of cottonwood trees in my pasture. I have painted them with crude oil last year, but the horses do not pay much attention to it, besides the oil is injuring the trees in the hot weather.—F. K., Imperial.

Your horses are needing some green feed. In its absence give them some alfalfa for a time. Mix one spoonful charcoal (powdered) in bran once a day for three days. Do not feed entirely on alfalfa but mix it with barley or whatever you feed for roughness.

Poor Freddy.

Reggy—Why does Freddy have so deuced many broken cigars in his vest pocket?

Clarence—Sh! Freddy wants the chaps to think he hugs so many girls, so he breaks the cigars and puts them in his vest pocket every evening.—Chicago News.

Advertising Column for Members
OF THE
JERSEY BREEDERS ASSOCIATION
OF SOUTHERN CALIFORNIA

Organized for the general advancement of Jersey interests, to extend knowledge of their superior merits, for the mutual benefit of members, and to increase the profitableness of one of the State's greatest industries. Breeders are requested to unite with the Association.

BULL FOR SALE
Having sold my ranch I am forced to sell Golden of Biltmore. 60082, a grandson of Golden Lad's. Golden of Biltmore is one of the best, ***if not the best*** sire on the coast, several of his daughters less than two years old selling for over $200 each. Highest bidder for next sixty days takes him. If everything is not just as represented, I will give anyone the ***bull free of charge. I sell on merit.***
C. S. Burgess, Riverside, Cal.

Pure St. Lambert Bull
—ST. LAMBERT OF RAMONA, No. 62633,—
heads the Ramona Herd of Registered Jerseys of
Geo. W. Thomas, Riverside, Cal.

The Whiting Jersey Stock Farm Co.
Have moved their herd of Jerseys from San Bernardino, Cal., to the famous Imperial Valley, and hereafter their post office address will be Heber, San Diego Co., Cal., from which they will conduct all their business. Abundant green feed every day in the year will be of great advantage in the best development of our young stock.
Whiting Jersey Stock Farm Co., Heber, San Diego Co., Cal.

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Service bull "SARGENT FOX," 64833. Bred on the Island of Jersey. Sire, the great Flying Fox, that sold at auction for $7,500. Dam, Miss Sargent, reserve winner over Jersey; winner of seven first prizes and five championship cups. "One of the grandest cows the island has ever produced."

VENADERA HERD
OF REGISTERED JERSEYS
Offers for sale three richly bred heifer calves sired by Marigold's Exile King, out of good cows. Also a yearling son of the great cow Nettie Underwood, official test 10,992 lbs. milk, 668 lbs. butter in one year. For records and prices write
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Jersey Mead Stock Farm
HIGH CLASS REGISTERED
JERSEYS, POPULAR
STRAINS
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Sons of imported Golden Marquis out of prize winning and tested dams. for sale.
L. Bradbury Duarte, Cal.

Kings Victor King of St. Lambert
At head of herd. Young stock for sale.
H. N. WILLIAMS COMPTON, CAL.

Profit in the Poultry Yard

BY MRS. A. BASLEY, HOLLYWOOD, CAL.

EDITOR'S QUESTION BOX.

The Editor's question box is so full this week that it will be impossible to crowd in the usual articles without crowding out the important questions that many wish to have answered.

* * *

Chicken-pox.—(Mrs. T. M., Ontario.) Would you please tell me what is the matter with my chickens. They have a yellow substance in their throat and mouth. I have put sulphur in their throats. They don't seem very sick unless there is a good deal of it. Yesterday I discovered some of my hens were beginning to have little sores break out on their combs and heads and around their eyes. One seems nearly blind her eyes are so bad. It is something like swell head that chickens have sometimes, but their heads are not swollen at all. If you could tell me anything to do I would be very thankful. I have lived here 16 years and never had any sick chickens before. I think so much of my poultry I do hate to have them get sick. What do you think could be the cause?

Answer.—Your chickens have the chicken-pox. It is caused by a germ something like the chicken-pox of children. It is very contagious, and affects both young and old. The germ usually enters in a small wound on the head, and it has been supposed that the bites of fleas, lice, mites or ticks give an entrance to the germs. These germs are more numerous in damp weather and multiply in leaky houses and moistened droppings.

The treatment consists in keeping out all infected fowls, disfecting by whitewashing or spraying the houses with a solution of five per cent carbolic acid. Apply carbolic salve or carbonated vaseline to the sores. Feed a nourishing diet, one third being cut clover, and add a little sulphur to the mash.

For the yellow substance in the mouth swab out with peroxide of hydrogen, and if they are not well in a week try sulpho carbonate of zinc, four grains to the ounce of water, painting the yellow growth with this.

I think within a week all your fowls will be well.

* * *

Running at Eye.—(W. B., Montecito.) Will you kindly tell me through your paper whether over feeding and fat will cause trouble with chickens, as I have a pen of Black Minorcas and several have a running at the eye this last week. Is it over feeding or what is the cause; everything clean and a good house and feed mash in the morning of half bran and half Coulson Egg Food, mixed with skim milk and grain rations, consisting of half wheat and half barley for the rest of the day; they are very fat and ten months old.

Answer. The running at the eye is not caused by over feeding; it always comes from a cold in the head. Your hens have been in a draft of night air, possibly a crack in the house near where they roost (if so, mend it) or during the day they may get in a draft under the barn, or they bunch up at night, get sweaty and in the morning the cold air chills them.

Pour a cup of coal oil (kerosene) into two quarts of cold water; the oil will float; dip the hens' heads slowly into this and hold it there while you count three. Give her a bolus of the following mixture: 2 tablespoons, 1 oz. lard with 1 tablespoon of mustard; 1 of Cayenne pepper; 1 of vinegar; add flour enough to make stiff dough; give a bolus as big as the first joint of your little finger. I think this will cure in two days.

* * *

Co-agulated Whites.—(Subscriber, Glendale.) Since coming to California we have had a peculiar experience with eggs. Although we get them fresh every week from a neighboring ranch where the hens apparently have everything conducive to the production of the best eggs, we often find one in which the albumen is partly coagulated or has a milky appearance, it sometimes amounting to almost a semi-transparent membrane Often there are none in a dozen and then there will be one or more and in two or three consecutive dozens some two weeks ago there were four in each dozen, which as we do not use them made eggs rather high when forty-five or fifty cents a dozen. The people who raise them do not know the cause and use the eggs, but we are squeamish. Can you give any information about it? I think, though we have not carefully observed that the trouble is worse in the fall.

Answer. I have frequently observed this in eggs that have been preserved for fall and winter months, by the lime salt process, and I feel sure that you are buying eggs laid sometime when eggs were cheap and plentiful and kept till they are a good price. You say the trouble is worse in the fall which confirms my opinion.

* * *

Brown Leghorns, Grit, Etc.—(C. H. V., Pomona.) I began in the chicken business on a small scale about two years ago and have been following your advice since we began taking the Cultivator two years in April. I feel that I have done very nicely. I have tried several breeds but have given all up for Brown Leghorns.

Possibly you remember I sent in several lists of questions a year or more ago and now I want to trouble you again. I have heard that some of the poultrymen in the north feel that little chicks do not get grit enough at first so their first meal is grit put in warm tallow and stirred until cold. That they are fond of the tallow that forms around the grit. What is your advice?

Would it do any harm to pin cheese cloth or a piece of burlap over the one that is tacked on in the nursery of the Cyphers incubator to keep it from being soiled at hatching time.?

How long to Brown Leghorns need heat, providing they are feathered out and can tell male from female? I am running 19 females with one cock (Brown Leghorn), is that too many?

Answer. I would advise your giving little newly hatched chicks coarse sand or fine chick grit for the first meal. I do not think the tallow would benefit them at all and it is an extra trouble. It certainly is not following Nature's plans.

You can put a piece of cheese cloth over the burlap, but nothing thick. The best way is to remove the bottom after each hatch; take it out of doors, brush thoroughly and sun it. If necessary it can be washed and at the end of the season I always replace the burlap with a new one.

It depends upon the season, the weather, and the vigor of the chicks how long they require heat.

Nineteen females to one male in the Brown Leghorns will not be too many if the male is young and vigorous.

* * *

Klondikes.—(H. O. Alsbach, Santa Ana.) I recently read a description of the breed of chickens known as Fluffs, formerly called Klondikes. They are said to be splendid layers and table chickens. Pullets commencing to lay at four to five months old and as a table chicken they have no superior. It is also stated that they unable to fly and can be

English's Golden Laced Wyandottes
Blue Ribbon Winners
of the Pacific Coast. During the past few seasons they won the ***Highest Awards*** at San Francisco, Alameda, Fresno, Los Angeles and San Diego shows. Did not exhibit this season owing to change of location, but my Goldens are superior to any of those I have raised before. Two breeding pens only containing the grandest Golden Wyandottes to be found anywhere on the Pacific Coast. Eggs from these matings, $2.00 per 13. No stock for sale.
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Blue Andalusians
Did you see our large display at late show, showing our three distinct strains, Cosh, Morse and Griffith and every ribbon won by Andalusians were on birds from our strain. Our pens are all headed by Blue Ribbon birds from Madison Square Garden, Chicago and Toronto Exposition and our own popular Griffith strain. Eggs for hatching, $2.50 and $3.5 per 14, guaranteed. Also incubator lots from $7.50 to $15.00 100.
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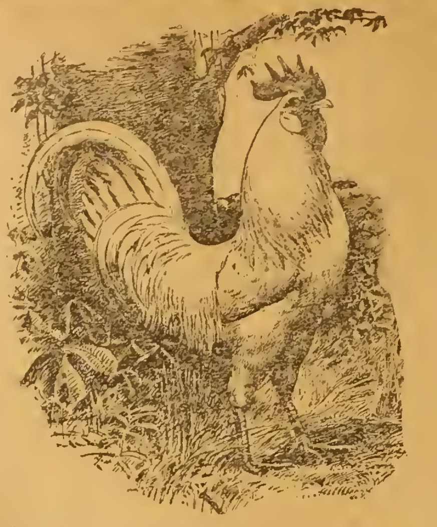

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Greatest Layers. Largest Eggs.
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FIRST PRIZE HENS, St. Louis World's Fair; also at Madison Square Garden, New York's Great Show, 1905.
All specials and medals—best hen, best head, pure color.
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Improve your flock with one of our large, beautiful White Cockerels.
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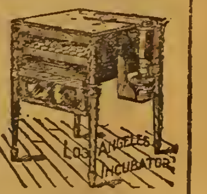

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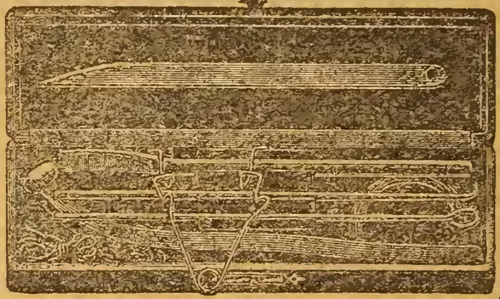

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St. Louis, Mo., Dec. 8th, 1604.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A FILCHER, Commissioner.
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Read the following telegram received from the Lewis & Clark Exposition at Portland:
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Eggs for hatching from First-Class Stock $6.00 per 100, $1.50 per setting 15 eggs.
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Eggs from strong constitutioned, producing birds. $1.25 per setting, 2 settings, $2.00.
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Six years continuous and exclusive breeding of Reds. First on cock at L. A. Show, '06. Eggs, per 15, $2.00. MRS. E, L, COWAN, R. F. D. 1, Santa Ana.

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Prize winners at L. A. Show, '06. Eggs from good laying strains. Eggs, special matings, per 15, $2.00. Incubator lots, $6.00 per 100.
Hemet Poultry Yards, Hemet, Cal.

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$1.50 and $2.00 for 15, $7.00 per 100. Free range. I raised and sold cockerel winning first prize at late L. A. poultry show. Stock. *Mrs. J. S. Duff, 3145 S. Hoover St., Los Angeles, Cal.*

100 Brown Leghorn Hens For Sale
Not fancy, but strong thoroughbred stock between 1 and 2 years old, $9.00 per doz. Must have room at once. Satisfaction guaranteed. Write today. R. P. Brubaker, Shandon, S. L. O. Co., Cal.

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Eggs for hatching from thoroughbred Buff and Black Orpingtons and Silver Penciled Wyandottes. A few choice Black Orpington cockerels for sale.
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I guarantee 100% fertile. Write for prices.
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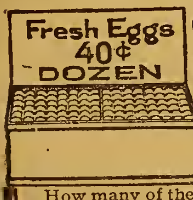
White Leghorn Eggs for hatching, in incubator lots only, at Ten Cents a dozen over Los Angeles market quotations. Avenue Poultry Yards. Ventura, Cal.



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THE Profit in Poultry Raising is in the 30c and 40c Eggs.
How many of these, per Hen, did YOU get last winter? And are you CERTAIN that you shouldn't have had MORE?
Be CERTAIN THIS winter by using
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and KNOW that you are getting EVERY EGG your hens are capable of laying.
Because there is no GUESSWORK about Purina Feeds—they have been tested by feeding different combinations and watching RESULTS in the Winter Season, until, they will make your Hens keep right on laying all winter, no matter how low the thermometer goes.
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If the RESULTS don't come, just tie up the bag and write us, and we will return every penny of your money and tell you what to do with the unused feed. You are not out a cent in making the trial, for we will supply you through your dealer, or direct, FREIGHT PAID, and the feed used in testing will cost you nothing.
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We want you to send and get our big free 124 page catalogu and poultry book, contains 300 illustrations, and much valuable plain, common sense, everyday chicken talk. It cost a lot to prin this book, but we are glad to say that it's ***Free to You*** for the asking. The "Old Trusty" is the Incubator that had the best hatch for the recent Los Angeles Poultry Show—every chick strong and healthy. Did you see the others?
Send today for the big catalogue—it's worth while.

The McClanahan Co.
711 South Main St. ***Los Angeles, Cal.***

confined by a two or three foot high fence. Will you please tell me if the assertions are correct and also if the chickens are hardy and will thrive in this locality? If so, will you kindly give me through the California Cultvator, the address of the nearest breeder who has eggs for sale, from the white variety of said fowls and oblige the above signed.

Answer. I have read of these fowls but have never seen any. There were nóne at the Poultry Show this month.

If any of our readers can reply to this letter of H. O. Alsbach, I shall be glad.

* * *

Fertility of Eggs.—(F. C. B.) I am running a strain of Black Langshans and for breeding purposes; I have in each pen with a ten month old Cockrel, ten hens one year old.

Very recently I started up an incubator with the eggs from this stock, and on the first testing I found one-half of the eggs were not fertile.

I cannot believe that it is their feed as they are all doing nicely every bird is in a perfectly healthy condition and looks finely.

Then, too, I am running another strain of birds and they are all doing well and their eggs seem to be very fertile, at least the percentage of fertile eggs from this strain run as high as any one could expect. We mix a little rich pepper with the morning mash two or three times a week at this time of the year, is their any chance of that being a detriment to breeding stock?

The writer would appreciate any advice or suggestions that the Cultivator might offer through its columns

Answer. Before receiving your letter I had prepared an article on the fertility of eggs, this will either appear in this week's paper or the following week. It deals more fully with this important subject than would be possible in a letter.

The usual rule for mating up for fertility is in the Mediterranean class twelve to fifteen females to one male. American class eight to twelve. Asiatic class six to eight. These last are the heaviest birds and much less active than the others. It much depends upon the vigor of the male. If you are trap nesting your hens you will discover which hens are laying infertile eggs, remove those to another pen and give them another mate. Red pepper should not be fed to a breeding pen; give instead rather more meat. See article on this subject.

* * *

Indian Runners.—(Mrs. J. L. H.) I have two Indian Runner ducks. They are about ten months old. They lay about three eggs and then stop and do not lay for a couple of weeks. So will you please state the reason in the question box of the California Cultivator. I have taken your paper for a year and am very much satisfied. When is the proper time to pick Indian Runners? and how often do you pick them? How many eggs should one duck lay?

Answer. You are not feeding your ducks right. The ducks need a certain amount of food to keep them alive, then the surplus goes to making eggs, if it has the proper elements of the egg in it. Yours lack something, so that it takes the duck nearly two weeks to save up that which is lacking to make the egg. As you tell nothing about food I can only make a guess that you are not giving the material to make the egg shell.

Give plenty of finely crushed oyster shell to make the shell; give plenty of animal food and green food, only a little corn, or corn meal in the mash.

I never pick Indian Runners because they are great egg layers and fowls cannot make both feathers and eggs at the same time. Ducks can be picked about everey two months.

My Indian Runners, when properly fed, gave me two hundred and thirty three eggs per year.

Minorcas and Rocks.—(L. S. S., Cupertino.) Will you please tell me through your Cultivator of some reliable poultryman that has Black Minarcas and Barred best laying strains. Will you please tell me which you think are the best Rocks, as we want them from the laying; the White Minorcas or the Black Minorcas?

Answer. Look in the columns of the Cultivator for answer to your question.

Rhode Island Reds
Fine stock of cockerels and hens for sale. Eggs, $1.50 per setting.
C. E. DAVIS, REDLANDS, CAL.

Young Half-Wild Turkey Gobblers For Sale
Turkey Eggs from pure bred Mammoth Bronze $4 per 13.
Mrs. N. Frank Morse - Fullerton, Cal.

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Easy, quick and certain riddance of vermin on poultry and animals.
"I have used the Prussian Lice Killer on my chickens and it is certainly the best I ever used. It is easily applied and it does its work in great shape. I will say to my fellow poultry keepers that they will save time and trouble by using Prussian Lice Killer.
Harry Rutledge, Dyer, Ind.
½ Gallon 50c. 1 Gallon $1.00.
Prussian Lice Powder
The dust method. Sure death to lice, no injury to birds or animals.
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In 25c and 50c Packages.
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"We have used Prussian Poultry Food for more than two years with great success. We find that it is the proper food for young chicks and just the thing to keep up laying hens."
Arnold Jungman, Poultry Yds, Gladstone, Minn.
In 25c and 50c Pkgs. 25 lb. Pail, $3.50.
"Poultry Profits," 36 pages, to poultrymen free, if you write us what stock you own.
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Thorough-bred Stock. Eggs, $1.50 per 15
INDIAN RUNNER DUCKS
Eggs, 1.50 per 12,
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Seven Straight Firsts
3 at Los Angeles, 4 at San Diego
Won by Hannah's White Leghorns
Eggs for Hatching: Utility—$1 per setting, $5 per 100; large birds, heavy layers. Exhibition—$2 per setting, $10 per 100; layers and winners combined.
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Fairview Poultry Yards
W. Plymouth Rocks
S. L. Wyandottes
At the recent Los Angeles show our Wyandottes won 5 ribbons on 5 entries. No Rocks shown. Eggs, $1 and $1.50 per 15, $4.50 to $6 per 100. A few male birds for sale.
A. E. Nelson, El Monte, Cal.

WILLARD POULTRY FARM, HYNES, CAL.
Mrs. F. T. Hungerford, Manager
INDIAN RUNNER DUCKS
At San Francisco show, 1905, I won 2nd and 3rd on young drake and 1st on young duck, with 3 entries. At the 1906 Los Angeles show, 1st on old drake, 1st and 2nd on young drake, 1st and 2nd on young and old duck and 1st on pen. Eggs—$1 for 13, $3 for 50, $5 for 100. Hens' eggs all ordered up to April 1st.

FOR SIX YEARS
Albers' Black Minorcas
Have led in the shows every year, and they lead all breeds in egg production all the time. Eggs in large or small lots. Stock for sale Circular free.
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30 DAYS TRIAL
Buy From Our Factory—Save One-Third.
PRACTICAL INCUBATORS positively the best. Hatches more and stronger chicks. 10 YEARS' GUARANTEE
Cat. free. PRACTICAL INC. CO., 720 S. 11th St. San Jose, Cal.

Dean's Pacific is an Incubator built on scientific plans and has all the latest improvements. Every machine guaranteed. "Facts From Experience" and Catalog for the asking. Address ***Dean's Place, 2509 Central Avenue, Los Angeles.***

Oxford Poultry Farm
Pure-Bred S. C. White Leghorns
One of the Largest, Yarded, Exclusive White Leghorn Poultry Farms on the Coast
Can furnish eggs for hatching from two grades as follows:
The First-Grade Pens are formed from birds in their second season, only the choice specimens being selected. These are the prolific layers with good carriage and color and strong points throughout.
Price per setting of 15 eggs, $2.00; 100 eggs, $7.00.
The Second-Grade Pens are formed from birds in their second season, containing only the ones that are strong in both shape and color. Exceedingly good layers for the grade. Equal to many first grade birds.
Price per setting of 15 eggs, $1.50; 100 eggs, $5.00.
Choice Breeding Hens For Sale. Address
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BREEDING BARRED ROCKS.

There is today probably no variety of thoroughbred poultry which has commanded so much study and scientific breeding to produce highclass specimens as the Barred Plymouth Rocks. In the first place the selection for the breeding pen is indeed no easy task, as those of known ancestry must be used in order to get the proper start and lay a foundation upon which to build, as no matter how hard you try or how careful you breed you cannot produce fowls of a high grade unless you first get the right start.

Chance birds are of little use as breeders, as they will not often reproduce themselves, and a whole season's breeding is lost no results accomplished, for your time and trouble, all of which goes to show that ancestral backing is a very important factor. This is not only true of Barred Plymouth Rocks but of any other variety of thoroughbred poultry which you may be interested in.

While what has been said above is very important for successful breeding, cleanliness is one of the first essentials to success in raising poultry, and this not only means to keep your houses and yards in a cleanly condition, but your fowls free from vermin, with comfortable, dry houses, and free from drafts.

A Pair of Barred Rocks

In the breeding of Barred Rocks today there is employed what is termed the single and double mating, some breeders desiring one method and other breeders the other, but it has been demonstrated by the foremost breeders of this variety today that the double mating system has produced a higher percentage of first class birds than the single mating

In the double mating system, to produce highclass males, the pen should be composed of an exhibition male, narrow barred, even color, and of standard weight, and to him should be mated females of the same line of breeding, several shades darker than the standard color, always keeping in mind the idea of offsetting the defect in the male with that of the female, or vice versa. For highclass females, select a male of medium light color, and even from head to tail mate with females of standard color, closely and evenly barred, down to the skin.

From the above matings you should produce a good percentage of highclass males and females.

I have been breeding this variety for over 11 years, and have yet to find a fowl more desirable for all general purposes.

In the former part of this article I referred to the fact that in order to get satisfactory results, birds with proper ancestral backing should be procurred, and this can be done by getting stock or eggs from a reliable breeder, and one who has made a reputation for himself not only in the show room but for honest and square dealing.

Whatever you get, get the best, and while it costs you a little more in the beginning the results in the end are far more satisfactory.

,And finally let me say, that with a good start, from a reliable breeder, cleanly quarters for your birds, and careful judgment on your part, you cannot help but be ultimately successful.—H. R. Campbell, Petaluma.

PIGEONS AT THE POULTRY SHOW.

The pigeon department at the late show held in Los Angeles, Jan. 8-15, 1906, was the best display of fancy pigeons ever brought together in Southern California, while the number was less by 81 to the number cooped last year, the variety was greater and what was short in numbers was more than made up in quality. The pigeon fanciers were well pleased with the exhibition in every detail. Judge S. Tyler, of South Pasadena who placed the awards, in commenting upon the birds said, "take the show all the way through, I never had the pleasure of handling better stock." Wilbert E. Foster, superintended the exhibit.

Many of the classes were extraordinary well filled and competition was especially keen in the Dragoon and working Homer classes. The Dragoon class was filled by J. C. Garvey, Wm. Huber, Martin Smith, E. G. Waltz and John Brenton. White and black Dragoons were heavy classes in both sexes, 10 birds each class. Working Homer class were filled by E. V. King, E. G. Waltz, Geo. Kammers, J. C. Garvey and the Olive Lofts; these classes were the best filled of any class in the show, Blue Barred running as high as 12 birds to each class. The judge had to take considerable time in choosing the winner, they run so even in all points it was difficult to award premiums.

The Maltese hen pigeon display was the finest ever given in California. The fanciers filling these classes were W. H. Elliott and Olive Lofts. Mr. Elliott carried off the lions share of prizes. This variety of birds is becoming very popular and will give the little Homer a merry chase for first place in squab breeding for the market. They breed equally as fast and give much larger squab; their main drawback is that the ordinary breeders cost so much more than the Homer. The English Runt class was not so large as last year, but made up in quality what was short in quantity. Pouters were out in full force and were no doubt the best display of this variety ever made this side of

Standard Bred S. C. White Leghorns

EXTRA LARGE BIRDS AND HEAVY LAYERS. Eggs, $2 per 15; $8 per 100; $60 per 1000 from January until July only.

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Author of "A Practical Poultry Plant for Southern California," $1.25 cloth binding, on sale by Calif. Cultivator

Emery's Pure Meat Meal

Don't believe all we say, but just enough to buy our Poultry Foods

Ask your nearest dealer for them and take no imitations

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The Stockton Incubator

Is now manufactured under new management and is in every way put up as a first-class machine. Our 1906 model is a perfect working incubator, economical to run and gives a fine hatch.

Winner of silver medal at Pan-American, also medal at California State Fair. Write for circular and information.

Stockton Incubator Co.

Marshall & Barnes, Props. Stockton, Cal.

White Plymouth Rocks

NOTHING ELSE

The best utility fowl grown. The one that is being adopted by practical poultrymen who are in the business for the dollars produced. At the San Diego Show, just held, we won 13 out of a possible 15 premiums, 3 silver cups, etc. See our exhibit at the Los Angeles Show, Jan. 9-13. Eggs from standard-bred Rocks, $1.50 per 12.

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Sure Hatch Incubators

AND BROODER

Are recommended by the U. S. Dept. of Agriculture and Dr. Richard H. Wood, America's foremost authority on poultry breeding, after trying 12 different machines, states that the Sure Hatch is one of three only that gave satisfaction. He adds:

"Your Machine Hatched the Surest of the Lot.

It was easy to adjust and easy to regulate. Your lamp is good, reservoir simple and compact and All in Sight." Freight prepaid and catalogue free.

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Mission View Poultry Ranch

SAN FERNANDO MISSION

Winnings at Los Angeles Show, 1905

WHITE WYANDOTTES: PEN—First; COCKEREL—Second; PULLET—THIRD. First on OLD TOM MAMMOTH BRONZE TURKEY.

Winnings at the Poultry Breeders' Society of Southern California, 1906

WHITE WYANDOTTES: PEN—First, Fourth, Fifth; COCK—Second, Fifth; HEN—First, Second, Third, Fifth; COCKEREL—First, Third; PULLET—First, Fourth, Fifth. ¼ WILD MAMMOTH BRONZE TURKEYS: OLD TOM—First; YEARLING TOM—Second; HEN—Second, Third, Fourth, Fifth. BUFF COCHIN BANTAMS: COCK—First; HEN—First; COCKEREL—Second. GOLDEN LACED WYANDOTTES: PEN—First. LAKENVELDER and ENGLISH SALMON FAVEROLLE: All awards. RING NECK CHINA PHEASANTS: PAIR—First.

All perfectly clear eggs replaced if tested at 6 days and returned within 8 days of receipt of shipment, express prepaid. The Original Mammoth Adobe Incubator is now set with 1529 White Wyandotte eggs.

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Breeders of S. C. White Leghorns Exclusively

We have but one grade of eggs to sell for hatching From our breeding pen composed of selected stock that are bred for great egg production. Price, $1.50 per 15, $5.00 per 100. Also a few choice Cockerels at $5.00 each. SEND FOR ILLUSTRATED CATALOGUE

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Guaranteed to be Pure

The only food scientifically compounded by a practical poultryman. Not composed of cheap mill feed or drugs. Many are using it with great success. A 100-lb. sack makes 1600 lbs. of Balanced Ration. If your dealer does not keep it, send to us and we will send you a 50-lb. sack for $2.50 or a 100-lb. sack for $4.50 and we pay the freight. SEND FOR BOOKLET.

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World's Chick Feed of To-Day. The only original Dry Chick Feed. All others are worthless imitations. Chamberlain's Perfect Chick Feed was used exclusively at the great St. Louis World's Fair during the 7 months. This the highest compliment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.

"Nothing Just as Good" "Nothing Just as Good"

CHAMBERLAIN'S PERFECT MASH EGG FEED.
THE WORLD'S GREATEST EGG PRODUCER.

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SPECIAL PRICES ON TON LOTS.

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RHODE ISLAND REDS

Fine large stock, heavy layers, best of broilers. Eggs, $1.50 per setting.

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Prize winning birds at Central California Fair, where 7 firsts were won in '05.

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Bronze Brown Turkey Gobblers For Sale

Weigh 25 lbs. at 15 months old. Prices—Gobbler and Hen, $12; Gobbler, $8; Hen, $6.

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BUFF LEGHORNS BARRED ROCKS

Prize-winners at Chicago, St. Louis, San Francisco and majority of prizes at Portland on Buffs. Choice Cockerels and Pullets for sale.

White Rocks Exclusively

Limited number of young birds. Eggs from prize winning, producing strain, $2 per 15 or $5 for special mating. Write for circular.

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White Plymouth Rock Cockerels

6 extra fine birds, only $3.00 each if taken now

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Standard Bred White Wyandottes, (Hay's strain). Eggs for hatching from carefully mated stock, $2 per 13; $12 per 100.

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Send for large circular fully describing these machines.

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SQUAB BREEDING

and Fancy Pigeons. Largest stock on the Pacific Coast. Homers in 500 pair lots. Twenty (20) varieties of Fancy Pigeons. Safe shipments any distance.

THE OLIVE PIGEON LOFTS

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$12.80 For 200 Egg INCUBATOR

Perfect in construction and action. Hatches every fertile egg. Write for catalog to-day.

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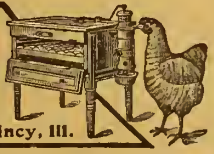

WHITE LEGHORN CHICKS, 10 Cts.
WHITE PLY. ROCK CHICKS, 12½c.

Both from good stock and in good healthy condition. The W. P. Rock males where I got my eggs are from prize winning stock. Leghorns are selected and have good markings. This is a fine time to start young chicks, after the rain; yards purified, green growth coming and mites and lice at a disadvantage.

Wm. A. Green, Box 401, Anaheim, Cal.

ALBERS' BLACK MINORCAS

Still Lead

——Circular Free——

GEO. R. ALBERS

4849 MARMION WAY
LOS ANGELES, CAL.

Mountain View Poultry Ranch

S. C. White Leghorns—Heavy layers. Eggs, $1.50 per 15, $5.00 per 100.

Indian Runner Ducks—Males for sale. Eggs, $1.00 per 13, $3.00 per 50, $5.00 per 100.

Mrs. J. L. Updyke - Fullerton, Cal.

Successor to Jacob Kreger

Rose Comb White Leghorns

High Grade Buff Orpingtons

Varian's Poultry Yards

P. O. Box 666. Home Telephone 1886

895 N. Catalina Ave., PASADENA, CAL.

White and Silver-Laced Wyandottes
White Plymouth Rocks
White Leghorns and Black Minorcas

Plymouth Rock and Wyandotte eggs, $2.00 per setting, $8.00 per hundred.

Leghorn and Minorca eggs, $1.50 per setting, $6.00 per 100.

I have been breeding thoroughbred poultry for over 20 years and have as fine stock of these varieties as there is on the Pacific Coast.

I also hatch and can supply little chicks from a dozen to a thousand from the above varieties delivered anywhere within 72 hours of San Jose. Prices on application.

J. S. Smith, Box 526, San Jose, Cal.

YARDS—CORNER MOORE AND CHAPMAN STS.

the Rockies. E. Foster and Martin Smith were the fanciers showing them. The Parlor Tumbler entry was as large as ever seen at any Eastern show and drew a great deal of attention from the fact that the owners worked them on the floor of the showroom every half hour during the show Wilbert E. Foster, Wm. Hunter, Martin Smith and Olive Lofts filled the classes.

The squab breeding pens of Homers were not so strong this year as last, yet there were enough shown to make up a pretty class; one nice pen was that of C. M. Bates; they were pure white but not being quite as large, or even in size as a pen of Blue have had to take second place. This variety of pigeons always draws considerable attention on account of its commercial value and several good sales were made during the show.

The seamless band question was neglected last year and many birds were placed out of reach of ribbons on account of not being able to meet competition in the old class among fully developed birds. Every fancier should remember that a young bird hatched in 1906 must wear a 1906 seamless band that fits the bird, if it is to compete in the young bird class next show time.—W. E. Foster.

PIGEON FANCIERS FORM A CLUB.

The pigeon fanciers of Los Angeles have formed an association to be known as the Southwestern Pigeon Club. The officers elected for the ensuing year are as follows: W. H. Elliott, president; C. M. Bates, 1st vice president; F. G. McCoy, of Prescott, Arizona, 2nd vice-president; Wilbert E. Foster, secretary; Martin Smith, treasurer. Executive committee, W. H. Elliott, W. E. Foster, John Brenton, Geo. Kammers and F. G. Waltz. The club has fourteen members and expects to double that number in the next three months The purposes of the club are the improvement of all varieties of pigeons, also the holding of an annual exhibition either as an exclusive pigeon show or in conjunction with some poultry association. It will hold monthly meetings at which topics on pigeon culture will be discussed. Pigeon fanciers everywhere are invited to join.

STARTING THE CHICKS.

To get the chicks well started and keep them growing is not the easiest thing in the world. We find that the work is compensated, however, in the results that follow diligence. The whole summer's work is made up of the small details, which taken as a whole go to make success, and the poultry work that is made up without this part in it is generally quite costly. The work of getting the chicks hatched and started is too hard to let the vigilance lapse when the warm days of summer come. One of the most important parts of the warm weather work is the care that prevents crowding and sweating, thus starting colds which are sure to make trouble later. Too many chicks in one coop always sweat more or less. This causes colds, for as the chicks come out of their coops in the morning those in the middle of the bunch are sure to be warm, and then they catch cold in the same manner that a man does who gets too warm and then takes his coat off to cool down. These colds go from bad to worse and the night sweats continue, making them very offensive to the breath. Roup then sets in. This can only be prevented by keeping the chicks from crowding.

Eggs Wanted for Hatching

Our big adobe incubator brings the best results. Send us your eggs and we will return the chickens. Young Chickens and Turkeys Wanted.

Bamboo Poultry Ranch - Glendale, Cal.

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Single Comb White Leghorns

Winners of the Dodge Sweeney Cup

Best display White Leghorns in Sonoma County at San Francisco Exposition, 1906.

1st Pen, $5.00 per setting; 2nd Pen, $3.00 per setting. Eggs from Free Range 10 cents above Chronicle quotations. Stock for sale.

A H. M Davies, Western Ave , Petaluma, Cal.

If It's Cockerels Here's the Place

White Plymouth Rocks S. C. White Leghorns

Eggs in any quantity, fertility guaranteed. $1.50 and $2.50 per 15, $8.00 per 100.

H. M. Stiles, R. F. D. No. 1, San Diego, Cal.

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Buff and Black Orpingtons
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Eggs and Young Stock in Season

W. W. Bliss - Duarte, Cal.

Choice Alfalfa or Chicken Ranch

Twenty acres good sandy loam soil, no alkali, abundance of water, 5-room house, large barn and incubator cellar. Near Anaheim.

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Buff Orpington and Barred Plymouth Rocks

Pure Bred Stock. Eggs, $1.25 to $2 per 14. Satisfoction guaranteed. ***Mrs. Albert Miller,*** 1913 Ricardo St., [near Eastlake Park] Los Angeles. Tel. East 1767.

CHOICE WH. LEGHORN EGGS

For setting now ready.
$1 per setting, $5 per 100.

OVERLOOK RANCH FALLBROOK, CAL.

BRONZE TURKEYS

Hart's strain. Winners of five firsts at Los Angeles Show, '06, and always winners wherever exhibited. Write for prices.

ED. HART, CLEMENTS, CAL.

S. C. Brown Leghorn Cockerels

SPECIAL SALE

40 at $2 each; 20 at $3 each; 15 at $5 each; 25 Exhibition birds from $5 each and up. Eggs from my best pens at $3 per 15; second pen, $1.50 per 15. Send for illustrated circular.

W. E. Mercer - - Ventura, Cal.

Rhode Island Reds

Record making layers; average per hen, whole flock, 180 eggs for '05. $1.25 per setting, 2 settings, $2.00; incubator lots, $6.00 per 100.

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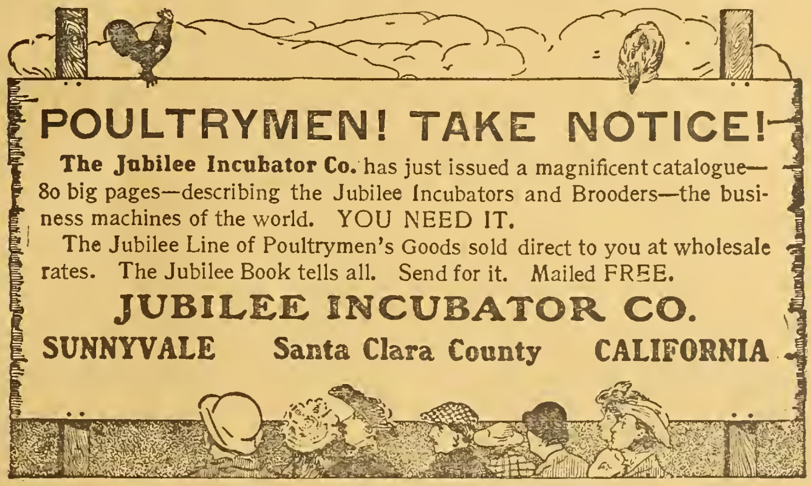

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Must Hatch Incubator Co.

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PETALUMA, CAL., JAN. 1, 1906.

TO WHOM IT MAY CONCERN;

As the chicken raising season is at hand, we beg leave to call your attention to a few of our specialties.

Do you need an Incubator? Our machines are fully guaranteed and have proven themselves unsurpassed wherever used.

Do you need Brooders? We manufacture just what you want; fully guaranteed, made of the finest material and of the best possible workmanship, and, above all, a practical machine which saves the purchaser money, time and labor.

Do you need Poultry Supplies of any kind? We manufacture a line of Supplies the use of which makes Poultry Raising not only profitable, but a pleasure. Among our specialties are:

Our Water Fountains; our Self Feeder for Chicks, our Feed Troughs, large and small; our Lamp Fillers.

Our convenient Must Hatch Nest Boxes ; our safe and sure Must Hatch Insecticide. our sanitery Must Hatch Disinfectant, our sure death Must Hatch Lice Exterminator, our Poultry Compound, a fine Spring and Fall Tonic.

In connection with the above list, all of our own manufacture, we can also furnish the following, which are indispensable to the Poultrymen:

The No. 128 Clover Cutter, the Enterprise Bone Mill, the Ohio Feed Cutter, the Banner Root Cutter, the Enterprise Feed Chopper, the Ideal Duplex Feed Mill, and the Farmer's Boiler.

Do you wish to make your own Incubator or Brooder? We can furnish you all the necessary parts for making an Incubator or Brooder, also plans for the best and most practical Poultry Houses.

Did you ever purchase Just Hatched Chicks? We have a Hatchery of 50,000 chicks per month capacity in operation the year round and have, for the past few years. been successfully shipping, in our specially constructed carriers, just hatched Chicks, to distances as great as 2,000 miles. If you need them, book your order early, as our future delivery list is rapidly filling up.

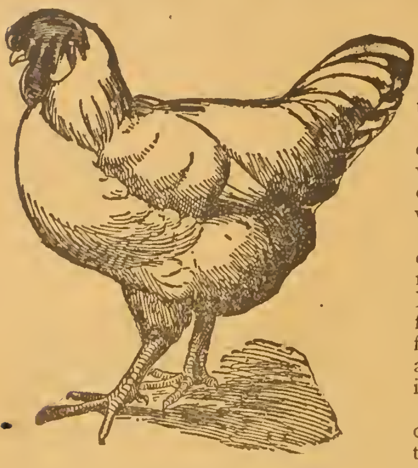
We can also supply White Leghorn hatching egg in quantities desired. If you have not already received our catalogue, write for Catalogue B, and you will find therein a more detailed description with prices, etc., of the above.

Hoping to hear from you in the near future, we are,

Yours Very Respectfully,

MUST HATCH INCUBATOR CO.

A Million Dollars For the Benefit of the Poultry Raiser



The Hen—consider what she does. Her own value is 50c and she lays an egg daily, valued at, say 2c. In one month's time she lays enough eggs to equal in value her own self.

The annual output of the gold mines of the Earth is small compared to the value of the Egg crop. The American hen produces annually more wealth than all our Wheat fields.

In taking up the Poultry Business, one should remember that "there is more profit in a small flock, WELL FED and cared for than in a large flock poorly fed." The idea that a flock of fowls will shift for themselves and return a profit to their owners, is a mistaken one.

They must be properly fed and cared for every day in the year if they are to prove profitable.

A. R. COULSON

To increase the profits of the Petaluma poultrymen by at least

$200,000 per Year

They need it. They deserve it—and if they WILL IT within themselves, they can EACH HAVE PART of it.

The rest of the poultrymen on the Pacific Coast may also have a share of the profits. This man's methods, if used by the poultrymen, would benefit the farmers and poultry raisers of California by one million dollars per year. It would increase the value of the Poultry Industry of the United States to over $600,000,000 a year.

$4 00 a Hen

How many laying hens have you got now? How many more can you get?

Suppose you could make those hens bring you in an income of $4.00 apiece this year? Could you make use of the money?

Make one strong, everlasting attempt to get out of the rut.

Make some money this year—make enough so you can BUY ALL the things YOU WANT, and still put quite a wad in the bank.

Make the money out of those hens of yours—don't lose hope. Science now comes to yaur assistance and you can make a hen lay

$4.00 Worth of Eggs

Strive to make each hen earn $3.00 a year profit for you.

How? JUST THIS WAY: Success lies within yourself. Are you willing to try?

Make up your mind and stick to it, that you are going to get all there is coming—that you will always see that the hens are kept supplied with clean, fresh drinking water, clean feed and water troughs, green feed, for the hens, warm, comfortable houses in winter, shade in summer, and FEED THEM once EVERY DAY without fail, a good square meal of COULSON'S IMPROVED MASH EGG FOOD, and a variety of other grains as needed. Coulson's Scratching Feed is also recommended to be fed once a day.

Spend a little more for the feed and make your hens lay twice as much.

You know that if you feed your hens this year the same as you did last year that your profits will not be any more, and that you will be just as poor one year from today as you are now, only one year nearer the grave.

To make your hens lay twice as many eggs this coming year, more than they did last year, you must feed better.

The COULSON IMPROVED MASH EGG FOOD will do the work. Use it and get rich.

$4.00 Per Hen

Coulson's Improved Mash Egg Food will only cost you 10c a bag more than the Regular Egg Food or about 10c per year per hen more to feed her, but the results in egg production will be increased by about $1 worth per each hen per year more. $4 Worth of Eggs from each hen per year. Try it.

Their 1st Birthday

Time, December. Since they were three months old they have been fed daily on Coulson's Mash Egg Food. These will be $4.00 Hens this year.

Are You a Knocker?

You know there is a certain class of men who think it necessary to knock every suggestion they hear advanced. It hurts them to suppose that man should be able to make suggestions to them. They are like the Irishman at a Donnybrook Fair, whowent around with a club in his hand, and every time he saw a head, hit it. Every time a suggestion is made to a man of this kind he will get his hammer and knock it on the head.

When Columbus sailed away from Europe people laughed at him, but when Columbus came back with his ships loaded with parrots and savages, proving that there was such a land, then everybody was eager to go to the new country and stake out a claim.

One Man Worth Millions to Iowa

Back in Iowa, a school teacher discovered a method of caring for and cultivating corn so that the yield would be increased nearly 100 per cent. So successful were his methods that Funk Bros., who had 20,000 acres of corn land under cultivation, agreed to hire him for one year to manage their place on good salary, to see what he could do. The result was that year they had an increase in their crop of over 100,000 bushels. The next year, 1904 this man traveled throughout the state of Iowa, teaching the farmers who were willing to learn, how to cultivate corn by a scientific method. That year, as a result, the corn crops of Iowa were thirty million dollars more than had been for any years before, and for ten years previous, the average yield was only 27 1-2 bushels to the acre. Now it is over 40 bushels to the acre. This shows what science can do.

Pick up the new ways—or you'll get left way behind. If in the poultry business, make each hen bring you in an income of $4.00 a year, by feeding **COULSON'S IMPROVED MASH EGG FOOD.**

Keep Up With the World

Fifty years ago you could only travel as fast as a horse could go and over rough roads. Now you can travel from one end of the country to the other between two Sundays. Think of the electric cars, or the sending of messages through the air! And don't forget about the new science of making a hen produce $4.00 worth of eggs in a year.

Don't Try to Get Along Without It

Nowadays it is not the things that we can get along without, but it's how far ahead we can get with the things that will help us to get there.

The Feed Free for One Year

There is no doubt about it. if you feed your laying hens Coulson's Improved Mash Egg Food every day for one entire year, that the hens WILL LAY so many MORE EGGS that the EXTRA EGGS will amount to enough to pay for the feed.

$4.00 a Hen

The average hen, according to statistics, lays only 66 eggs per year—many do not lay that many. A few poultrymen, by imitating as near as they can, a balanced ration, make their hens average 100 eggs per hen, and some as high as 110 eggs per hen per year. A number of poultrymen, last year, by feeding Coulson's Egg Food, averaged 180 eggs per hen per year.

One experienced poultryman, with 2,000 laying hens, fed Coulson's Egg Food the entire year, and the hens made an average of 184 eggs each. Taking the year through, the average price paid for market eggs last year was 28 cents a dozen. According to this, these 2,000 laying hens brought in an income of $8,000.00 OR $4,00 PER HEN.

What It Cost to Feed a Hen One Year

The cost of feeding Coulson's Improved Mash Food every day for one year, and also all the extra grain, Coulson's Scratching Food, etc., included, is $1.25 per hen.

So, if the hen produces $4.00 worth of eggs, they earn $2.75 per hen per year, average profit.

Egg Making Machines

Suppose you could find the substance that would strengthen and develop the egg-making organs of the hen, and at the same time supply the proper feed that could be easily digested and turned into eggs. The result will be that your hens will get to be regular egg-making machines.

That's what you want, isn't it? Thenfeed your hens one year on Coulson'sImproved Mash Egg Food, and make your little fortune. **SAMPLE FREE.** Ask your dealer about it or send for circular and free samples.

COULSON POULTRY AND STOCK FOOD CO., PETALUMA, CAL.

CALIFORNIA'S NEW INSECTARY

Continued from First Page

lished in the orchards and who could also stock infested orchards and groves without waiting for the grower to make application for them, which policy has been pursued in certain counties, and has made many new friends for the commission among the growers. Many cases of failure can be traced to a lack of correct knowledge of insect pests on the part of the grower who has applied for and received the wrong parasite, and wondered why the results obtained elsewhere have not followed his efforts. By the resident commissioner attending to the distribution of consignments it would insure their successful establishment.

In counties where the work of propagation is not understood, the commissioners should be instructed from the head office, and soon all the State would have a working force with beneficial insects that could not help but accomplish wonderful results. With this arrangement the difficulty of locating and gathering feed for the work of propagation could easily be overcome which is one of the greatest obstacles met with in the work at the present time, and through the medium of the Monthly Circular, issued to the Commissioners and Inspectors from the Sacramento office, we could all keep well informed upon the work in hand and by co-operating in this manner, the State generally would be greatly benefitted.

At the present time, we have over forty different predaceous Coccinellidae, Hymenopterous and Dipterous parasites that are awaiting occupancy of the new insectary, but I have only mentioned the recently imported ones, for a simple enumeration of the species, unless accompanied by a history of their respective work, would neither be interesting nor convincing, inasmuch as they have been tried and have proven what they are capable of doing under the proper conditions. As a single example of the value of their work, in that little room above mentioned there was reared from a start of three female flies, a horde of parasites that were turned loose on the Black Scale, and whose value, just two years after their introduction, Hon. Geo. C. Pardee, Governor of California, in his message to the legislature, placed at $2,000,000.

Many other countries are today following the example set by California and are fighting their insect pests by use of the natural enemies, and in some cases, have exceeded us by erecting commodious insectaries that are proving excellent investments.

If we contrast the present proposed conditions with the less unfavorable ones of the past, we may get something of a view of what the future, no doubt, holds out to us. This view leads us to the conclusion that it is then true economy to surround our predacious and parasitic insects with every possible facility for broadening the work so well begun, where, under such salubrious conditions as are offered in the establishment of the proposed insectary, as a functional benefit, my courage fails me to place an estimate on the possibilities of the future.

COWPEAS

Continued from page 100

will make perhaps as much growth as when sown in May. The bush varieties ripen in 60 to 90 days from time of planting. The long trailing kinds require much longer time, six to nine months.

When planting in drills, about 15 pounds of seed per acre is enough but twice that amount is required when sown broadcast. These amounts are not the same as those given in the books written for eastern growers, but experience during the last two years in the south, has demonstrated the fact that the cow pea makes a better growth if given plenty of room when young.

VALUE OF FERTILIZERS.

Editor Cultivator: Will you please tell me through your paper the respective commercial values per pound of nitrogen, phosphoric acid and potash, California prices.—Citrus.

Nitrogen in California is usually worth 16 cents per pound but the recent war in the east raised this price a fraction of a cent and it will cost a little more than 16 cents for a while. Nitrogen is used in the manufacture of gunpowder and is always higher in price when some great war is in progress. Phosphoric acid is worth 8 cents a pound in the available form and 2 cents in the insoluble form. Actual potash is worth about 6 cents per pound.

FRESH FRUITS FOR SAN DIEGO

Editor Cultivator: Wishing to plant a few acres of peaches and pears with the object of marketing them in San Diego in the fresh state, I would like your advice as to what varieties to plant. There was no curl leaf in 1905 but in 1904 I lost all my late Crawford crop from it. I intend to plant the following varieties of peaches: Early Crawford, Newhall, Elberta, Susquehanna, Picquets' Late and Lovell, picked them out of the catalogue; have not tried any them here yet.

I cannot see any quotations for fresh pears in the papers. Can you give me any reason for that? You one time spoke so highly of Duchess De Angouleme, what is its record now? What do you think of Barry and Winter Nelis? My elevation is 1500 feet and have been exempt from blight? Are the foothills as a rule exempt from blight? Winter Nelis and Flemish beauty had a big crop this year but Bartlett was very light.—A. K.

Newhall, Susquehanna and Picquets Late peaches never bore well at the Pomona station. In fact they were considered failures with us.

The reason why the quotation for fresh pears in the local market has been omitted, may be laid to the blight to a large extent. The chief pear districts of the state are in the north and the canneries used up almost the entire product the past season.

Duchess De Angouleme started out well with us but proved a failure after the start; one died suddenly from top to bottom with the blight and the remaining one never bore fruit enough to pay for the pruning.

Patrick Barry is a good pear and bore well with us. If you are now free from the blight and have tested Bartlett, Winter Nelis and Flemish Beauty and find they do well, they are good varieties to tie to.

Bartlett is liable to be a blight bearer some seasons.

Early Crawford, Elberta, Lovell and Salway are safe peaches for you to plant.

No location is exempt from the blight. It is a bacterial disease and will invade any orchard which once has an infected tree unless the disease is eradicated at once.

ASPARAGUS.

Editor Cultivator: Will you kindly inform me through the columns of your paper, what is the best time to plant asparagus seed and how to plant it? I have some seed from a few bushes about two years old.

Do you think that sandy loam like ours would raise good celery?—Mrs. H., Imperial Valley.

Asparagus seed may be planted now, as soon as the soil warms up a little. The seeds are very easy to start and in your section would need no special treatment. Cover about one and a half inches and keep well watered. If the soil is warm the seeds will sprout readily, especially if they be soaked in warm water for 24 hours previous to sowing. We do not think your climatic conditions good for celery growing even though soil was suitable.

MELON APHIS.

Editor Cultivator: Dear sir, last year I was troubled a great deal with a very small fly of light green color; it damaged my watermelon vines and tomatoes and squash; they seemed to suck the juice or sap until they would turn pale and die. They were very numerous and kept up their destructive work till late in the season. If you or any of your correspondents can tell me how to to control the pest, I shall be very much obliged. I remain, yours—J. M., Pleyto.

The only effective control of this pest is gained by fumigation with carbon bi-sulphide. Take two common barrel hoops, leaving one whole, cutting the other in half; cross the halves and fasten to whole hoop to form a frame work of a hemisphere. Cover with good strong paper. If vines are larger than this cap, gather up in a heap, put a saucer on top and pour in your liquid; put cap on quickly press down firmly and pull soil around the edges. You should have a number of such caps.

PLANTING NEAR PARTY LINE.

Editor Cultivator: Is there any law in California regulating the distance of planting trees and fruit trees, berries, etc., on or near boundary lines. If there is you will confer a favor by publishing it in the Cultivator and oblige a subscriber.—C. B.

You may plant as near the line as you wish. Fruit from your trees overhanging your neighbor's property belongs to him. If the other way about all fruit growing on your premises is yours, without regard to location of roots.

INOCULATION WANTED.

Editor Cultivator: I have alfalfa planted in young orange orchard. No nodules are on the roots, what can I do?—W. H. O., Covina.

Write to a seed firm for bacteria for alfalfa or go to a field that has nodules on roots and get a small quantity of the soil and scatter in your field or put soil in water and pour water on field.

JOHNSON GRASS.

Editor Cultivator: Please tell me in your next edition where I can get the true Johnson Grass seed. I want to sow an acre just for cow pasture on light soil to see if it produces more feed than our native grass.—J. D., Sonoma County.

As we consider Johnson Grass a serious pest, we would not advise its planting and cannot therefore tell you where to procure the seed. There is a law against planting it.

WALNUTS AND PEARS.

Editor Cultivator: As I am contemplating planting out several acres to walnuts, I would like your advice as to the varieties which would be the most profitable. Of course I would like a regular and heavy bearer. I prefer to plant the nuts where I want them to grow. Will the Santa Barbara soft shell reproduce itself and are they heavy bearers? I would like the best winter pear. Please give me the desired information. I have heard the winter Bartlett highly recommended; please tell me what you know of it and where I can obtain same. Kindly answer at your earliest convenience in the Cultivator.—A Subscriber.

The Santa Barbara soft shell walnut does not produce large crops in the northern part of the State and would not likely be profitable for you to plant. Any of the French varieties will be better as your conditions are more nearly suited to them.

We think it will be best to get your trees from a nursery as you are more likely to get an even stand of trees than by planting the nuts and do not have the trouble of caring for the small trees. You should by all means make the selection of trees yourself and get only the strong bodies and good root systems. Grafted or budded trees will give the best satisfaction when they get to bearing.

The winter Bartlett pear is highly recommended but we advise you to see what some of your successful pear growers are planting and do likewise.

Clubman—It's astonishing how many fools there are in the world!

Philosopher—Yes, and there's always one more than we think.—Translated for the Tales from Simplicimus.

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Household Department

A LITTLE DUTCH GARDEN.

I passed by a garden, a little Dutch garden,
Where useful and pretty things grew—
Heartsease and tomatoes, and pinks and potatoes,
And lilies and onions and rue.

I saw in that garden, that little Dutch garden,
A chubby Dutch man with a spade.
And a rosy Dutch frau with a shoe like a scow,
And a flaxen-haired little Dutch maid.

There grew in that garden, that little Dutch garden,
Blue flag flowers, lovely and tall,
And early blush roses, and little pink posies,
But Gretchen was fairer than all.

My heart's in that garden, that little Dutch garden,
It tumbled right in as I passed,
'Mid 'wildering mazes of spinach and daisies,
And Gretchen is holding it fast.
—Hattie Whitney.

FOR THE BRIDE—TO BE.

Lucy Haven Johnson writing in the the Farm and Home gives some homely hints to young ladies who are about to become wives and housekeepers. She writes of the things any girl can make which will prove useful as well as ornamental in the home. These are some of the pretty things she tells about which would certainly add comfort to any home:

A cover for the sideboard can be made of linen crash, which costs about twelve and a half cents a yard; cut it long enough so that the ends will hang over for about a quarter of a yard; fringe the ends, knot the fringe and hemstitch the edges. Then put two rows of drawn work above the fringe, or a simple vine worked in outline stitch across each end. Large disks and crescents outlined with heavy white silk floss are pretty scattered over the whole cloth. Mine has a two-inch border entirely around it, cross-stitched with six shades of wash silk in Oriental colors. The edge is finished with crocheted linen lace two inches and a half wide. It is very satisfactory and I really enjoyed working it, but it might seem a good deal of work to a new beginner. Two or three simple scarfs will not cost so much as one handsome one and a housekeeper will be able by having several to keep the sideboard looking nice and clean all the time.

Doileys are so convenient to keep the new furniture from mars. Bits of linen, lawn, crash, white brilliantine, silk or velvet, cut round or oval and buttonholed around the edge may be used for the center with a crocheted border.

A footstool may be made of, a wooden jelly pail with, a larger round board nailed to the top; pad on top with cotton and cover with flannel or velveteen as near the color of pail as possible. Around the edges nail with gimp tacks scallops cut from shoe leather. If jelly pails do not flourish in your vicinity buy four large harness hooks and screw them to a thick rectangular plank for a foundation. for your stool; lengths of old fork handles, fitted, glued and firmly nailed into holes bored in the top will do for legs. If there does not happen to be any paint, stain or varnish on hand, tube paint can be used to paint the legs. If there is a "handy man" around get him to make you one of the plain new "mission stools."

There are many things that it wouldn't be practicable to either buy or make until one is really living in the new home; but here lies the secret of all furnishing, have all colors correspond. No amount of money can give a pleasing effect where they do not, and the most home-made room is restful and homelike if the colors harmonize.

Nearly every girl of marriagable age possesses a few artistics pictures Have these suitably framed, with wire and screw eyes attached ready to hang upon the walls. Pictures take away that cold, bare, new look, sometimes noticeable in very new homes. Perhaps "mother" or "auntie" will have some articles that they can spare to help "our girl" out, for it is not always the new things that are the nicest. A cracked stone churn painted dark red or dull blue and ornamented with crackle work, with here and there extra dots and dashes of gilt bronze or bronze-green paint, will make a nice floor vase. It can stand in the hall with a Japanese plate for cards upon the top or in the living room, holding a great bunch of bitter sweet berries or red rose tips. A small paper sack should be filled with pebbles and set inside so that the vase will not tip over. A glass mustard pot, about seven inches high with a cover, may be filled with cornelians or agates covered with water, and makes a pretty little ornament. A tall, narrow half-gallon butter crock, a snuff jar or cracked pitcher may be painted like the floor vase to hold a nice growing plant.

A cover for a small table may be made of a square of velveteen or worsted cloth, bordered with a stripe of bright Oriental cretonne, or trimmed with tiny silkateen tassels made over a three-tined fork. It should be lined with cambric.

Very nice home-made rugs may be drawn upon burlap with a coarse crotchet hook, making a pattern in rows of half diamonds in red, yellow and black upon a gra-- foundation in imitation of a Navejo blanket. Finish the ends with fringe. Make this rug of all wool rags and use all the scraps of cotton in a hit or miss rug.

A young unmarried man with a moderate salary is not apt to save a great deal of it, but if he marries there is perhaps more necessity of economy and if his wife is a true helpmate they will find much pleasure in making a home together (cistern and woodshed included), which they would have missed otherwise. No sensible girl expects her husband to begin life where her father left off, and if she is not willing to help "feather" her new nest she would better remain with her parents for she would not make a "first-class" wife for any man.

A method of gathering on the sewing machine, which may be used on any material, and can be employed where the ruffler cannot is to loosen the tension of the upper thread until it is very loose, having the thread on the bobbin strong. Stitch across the material to be gathered, take from the machine and draw up the lower thread to the required length. This plan is much more satisfactory than the use of a ruffler, as one cannot always guage the ruffler to the required length.

Tools for The Farm

Keen Kutter quality tells in the actual use of the tool. Keen Kutter Tools are not retired by an occasional snag or "tough proposition." They are made to stand hard work and lots of it. They hold their edges, do not break easily, and last long after poor tools have gone to the scrap heap. The

KEEN KUTTER

brand covers a complete line of tools. In buying any kind of tool just see that the name Keen Kutter is on it and you have assurance of full satisfaction. Keen Kutter Tools have been Standard of America for 36 years, were awarded the Grand Prize at the St. Louis Fair, and are the best that brains, money, and skill can produce.

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Dallas, Houston and Fort Worth			25.00
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Santa Fe Agents in California will take deposits of money to cover price of tickets, which will be promptly furnished to passengers at any point from which these rates are in effect.

California illustrated literature mailed free to any address or may be had from Santa Fe representatives.

Tourist leeping Car Lines

Colonist tickets are honored in tourist sleeping cars which run via the Santa Fe to Los Angeles and San Francisco.

Cookery Recipes

ONION LUXURIES.

Onions and Cheese.

Take some large Spanish onions, skin them and boil them until they are quite soft. Drain and rub them through a sieve. Put the pulp in a baking dish and add butter, pepper and salt and a little stock or milk. Grate cheese over the surface and place in the oven until brown.

* * *

Onion Glaces.

Pour a third of a teacup of olive oil into a frying pan. When hot add six or eight good-sized sliced onions. Cook slowly until they are lightly browned, skim them out and put in a saucepan. Rub a heaping teaspoonful of flour into the oil, and add a half pint or a little more of soup stock. Season with salt, pepper and a little nutmeg. When this has boiled pour it on the onions and add a little celery chopped fine. Cover and simmer until done. Serve with hamburg or broiled steak.

* * *

To use up odds and ends of pastry make a lining in some small party tins and fill with two yolks of eggs whipped stiff and mixed with two tablespoonfuls of grated cheese. Beat the whites stiff and fold lightly through it just before setting in the oven, and bake stiff.

* * *

A goose having short legs, is trussed differently from chicken, fowl and turkey. After inserting skewers wind string twice around one leg bone, then around the other leg bone, leaving one inch space of string between the legs. Draw legs with both ends of string close to back, cross string under back then fasten around skewers, and tie in a knot.

* * *

Either cold or hot slaw is especially nice served on the same platter with fried oysters as a luncheon dish. Heap the slaw in the middle of the platter and serve the oysters around it. If cold slaw is used warm the platter without getting it too hot, lay a folded napkin in the center of it, and heap the slaw on the folded napkin.

* * *

Fillings for school lunch sandwiches which take the place of meat can be made from mixed fruit and nuts. Wash, stone and seed equal weights of figs, raisins and dates, and put them through a meat chopper with half the weight mixed and prepared nuts. Feed the chopper, alternating the fruit and the nuts, a little at a time until they are all chopped and mixed. Pack it down tight in baking powder cans, and when molded slice off thin slices and put between bread and butter.

HE WAS A BALL PLAYER.

Dan—"I wonder if the Koh-i-noor is still the biggest diamond there is?'"

Fan—"I dunno where that place Kohinoor is, but if th' diamon's any more'n ninety feet each way it ain't regulation an' oughtn't to be recognized."—The Pilgrim.

FORCED ENJOYMENT.

Tired Mother (to restless child): "Now you set still! I've druv you ten miles to enjoy this entertainment, and you shall enjoy it, if I have to pull every hair out of your head!"—The Pilgrim.

THE FAMILY DOCTOR.

Eating Wrong.—A physician of more than 20 years practice says there is greater ignorance among the people on the question of how to eat than on any other known subject. Not one person in one hundred eats according to nature's rules. He eats too fast; he eats too much; he eats the wrong kind of things, anyone of which will bring on dyspepsia and result in chronic stomach trouble of one sort or another. Children are made to bear burdens which would ruin animals of the same age. Think of feeding a year old babe pickles and doughnuts and yet that is what lots of mothers do without thinking what consequences of such diet will entail. The truth is half the people in the country don't know enough to raise babies so they will have stomachs in after life.

There are certain rules in regard to diet which all who have weak digestion need remember: Eat slowly; masticate the food thoroughly. The more time the food spends in the mouth proportionately, the less time it will spend in the stomach; avoid drinking at meals, as far as possible: food should be neither too cold nor too hot; eat no more than the system requires. Strength depends not on what is eaten but on what is digested.

Those who work hard do not always need a large amount of flesh food. They do need a liberal amount of albuminous food to supply the waste of the tissues, and this is found in larger quantities in peas and beans than in the best beefsteak.

Oat meal and wheat meal are also rich in tissue making elements.

* * *

Neuralgia.—Neuralgia is said to be "the cry of the nerves for food." By food is meant good blood, from which the nerves can draw nourishment and strength and become fortified to resist disease. Good blood may be had by right living—fresh air, good food, refreshing sleep, hygienic surroundings and work that does not tax the system too severely: Where a sensitive nervous organization and a weakened vitality are predisposing factors, these are cardinal points to keep in mind.

* * *

Cold Water Cure.—A celebrated physician once remarked that water used in various ways, internally and externally met with more requirements in healing disease than any other known remedy. We therefore hail with pleasure a "cold water cure" which is one of the good things that comes from the Russians. It is said that when a Russian woman is tired and her nerves are "on edge," she dashes cold water on her face or binds ice on her forehead. In the winter she wraps up and faces a blinding snow storm for a little while. So successful has she been with this heroic treatment that her English sisters are adopting the cure for more than weary nerves.

After a nervous strain, tired muscles—the head, arms, and feet are treated to the same remedy, a dash of cold water in some cases with marked relief.

CHEER UP!

Cheer up, honey,
  Doan' yo' cry;
Good times comin',
  By an' by.
From your brow that frown now
    banish,
Fah de clouds are suah to vanish,
  By an' by, by an' by.
—Leigh I. Maynard.

HOW MUCH THE HEALTH BOARD KNEW.

Some time ago the state board of health sent little wooden boxes to various towns in the state, with instructions to physicians that whenever any symptoms of diphtheria or other throat trouble appeared to have the patient deposit some sputum in the box and mail it to the state board for examination. Recently Abilene had a diphtheria scare and the state board of health heard of it, says the Kansas City Journal. A bright young physician there, who didn't take much stock in the sputum business, thought he would give it a test. He hunted up a young man who had never been sick in his life, whose lungs were as strong as a blacksmith's and whose throat was as clear as a tin whistle, and had him spit in the box. He sent it to the state board of health, with a request that it be examined at once and results wired him. The next day he got this word from the board of health; "Diphtheria dangerous; quarantine at once."

HAVE YOU LEARNED?

The value of sunshine?

To change a house into a home?

To think and judge without prejudice?

To look up, then reach up and grasp the best?

That some uncomfortable words may be overcome.

How much environment has to do with what you are?

What a little thing will sometimes make a child happy?

That an outside door or even the glass in it may tell secrets?

That there are two kinds of wealth, and that one is of the heart and mind?

That the paper and pictures on the walls, the carpets and curtains may affect the mood of a sensitive person?

That a tidy is out of place when it becomes more important than the object which it is supposed to protect?

From experience, that discouragements are to be found on all sides, but that encouragements are dealt out sparingly by prudent hands?—Good Housekeeping.

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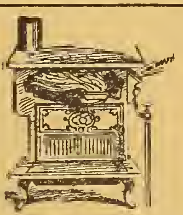

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Our years of experience in furnishing the best homes in Southern California have taught us to consider only the finest makes when selecting our stock, and at all times you will find our showing complete in every detail. It matters not whether you are choosing from the most inexpensive lines or from our finest specimens of the furniture art, you will find those same marks of superior workmanship and finish that at once show it to be the very best. Our furniture comes from the finest factories in the country—from makers of world-wide repute, who produce only thoroughly dependable goods. It is furniture that we are sure will give to our customers the greatest satisfaction. We are always pleased to show you our assortment, and feel confident that it will also please you.
"All Goods Marked in Plain Figures."
NILES PEASE FURNITURE CO.
439-441-443 SO. SPRING ST., LOS ANGELES, CAL.

Security Savings Bank
LARGEST SAVINGS BANK IN SO. CALIFORNIA
CAPITAL AND SURPLUS, $630,000.00.
TOTAL RESOURCES, $14,000,000.00.
4%
Interest Paid on Term Deposits
Write for Booklet "A" on banking by mail, also rain-fall chart.
HERMAN W. HELLMAN BUILDING, LOS ANGELES, CAL.

AN ECONOMICAL WATER-LIFTER.

The business of lifting water in California has had such a wonderful growth that it is hard to keep up with the latest improvements which progressive manufacturers are offering to irrigators. Among these progressive people the Pomona Manufacturing Company stands in the forefront with a most practical and ingenious inventor at the head of the concern new "Heads" and improved valves and cylinders have been brought forth until it seems as if the limit of economy had been reached. The Pomona people are today putting out a head which is exceptionally satisfactory, in that it has a continuous lifter with no "water hammer" and other application of power to the rods which gives sufficient use of the power employed.

These cylinders are made of the best brass tubeing and the valves are of the most approved pattern. These deep well features are fully as important as the mechanism of the head, or even more so for the reason that they are the most difficult to repair They are cast and finished completely at the shops of the company.

A card to the Pomona Manufacturing Company, Pomona California, will bring illustrated matter descriptive of these pumps which will give an idea of their construction.

"THE STRAWBERRY."

Right from the headquarters of "Kellogg's Pedigreed Strawberry Plants" at Three Rivers, Mich., comes a bright, well printed, finely illustrated monthly periodical entitled as above and devoted to the subject exclusively; price $1.00 per year.

An inquiry was made recently where asparagus roots could be had. In this issue W. M. Avis of Pomona advertises some first-class roots, three years old and just right for planting.

Golden Laced Wyandottes, Blue Ribbon Winners are advertised by J. English, of Arroyo Grande.

Mrs. Albert Miller of Los Angeles advertises Buff Orphingtons and Barred Plymouth Rocks.

R. S. Cox of San Marcos, Cal., is advertising White Plymouth Rock cockerels.

R. B. Brubaker, of Shandon, Cal., is advertising Brown Leghorn hens.

George W. Peck of San Diego, Cal., is advertising Seedless Blackberries in this issue.

White Leghorn eggs in Incubator lots are advertised in this issue by the Avenue Poultry Yards, Ventura, Cal.

The finest of Brandywine Strawberry plants are being advertised by the Barbour Ranch of San Gabriel.

The Reality Trust Company of Los Angeles is advertising poultry ranches in the Cultivator of this week.

Those wanting Black Minorcas will be interested in noticing George R. Alber's advertisement in this issue.

Grape cuttings of all varities are advertised in this issue by Peet Bros., of La Canyada, Cal.

J. A. Baker, of Glendora, Cal., is advertising orange seed bed stock on another page of this week's issue.

C. E. Davis, of Redlands, Cal., is advertising his fine Rhode Island Reds in this issue.

T. S. Ingham, Highlands, Cal., advertises grape vines in this issue.

W. M. Gray, of Gardena, Cal., calls attention to an exceptional opportunity for fine homes and residences in that section in this issue.

We are in receipt of the 1906 catalogue of Peter Henderson & Co., the largest and most ornate this well known firm has ever issued.

The Produce Markets

Los Angeles Markets.

Los Angeles, Feb. 1, 1906.

Butter.

B. of T. Creamery, per roll	.70
Valley Creamery, fancy	.70
Valley Storage	.60

Cheese.

Cal. 3-℔ hand	19½
Cal. Young America	18½
California Anchor	17½
Northern	16@17
Domestic Swiss	19@20
Imported do	26½@27

Eggs.

Eggs, Fresh Ranch	27

Poultry.

Fryers, 2½ lbs	17
Broilers, under 2 lbs., per lb	18
Young Roosters, per lb	16
Hens, per lb	15
Ducks, per lb	14@15
Geese	14@15
Turkeys	19

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock:

Hogs, 200 lbs	6
Prime Steers	4
Cows	3¼
Calves, cwt	4.50
Sheep, ewes, per head	5.00
Lambs, per head	3.25
Wethers	5½

Potatoes.

Northern, per sack	$1.50@1.75
Locals, per cwt	1.10@1.25
Sweets, white, per cwt	1.00
Sweets, yellow, cwt	1.25
Sweets, red	95

Vegetables.

Onions, Australian Brown, cwt.	1.50@1.75
Onions, yellow, cwt	1.75
Garlic	7@10
Cabbage, per sack	1.00@1.15
Cauliflower, per doz	35@60
Lettuce, per doz	15@25
Bell Peppers	15
Lima Beans	10@15
String Beans	15@20
Beets	.40
Green Onions, doz. bunches	20@25
Carrots, doz. bunches	40
Turnips, doz. bunches	30@40
Celery, per doz.	35@40
Peas, per lb.	6@7
Egg Plant	8@10
Chili Peppers, green	6½@8
Tomatoes, local	75@1.00
Parsley, per. doz. bunches	60
Summer Squash, box 20 lbs	1.25

Citrus Fruits.

Lemons, Standard	1.50@2.00
Lemons, Choice	2.25@2.50
Lemons, Fancy	3.00
Grapefruit	1.75@2.00
Seedless	2.50@3.00
Navels	2.00@2.50

Fresh Fruits.

Apples, Bellefleur	1.35@1.50
Fall Pippins	1.00@1.10
Red Pearmain	1.00@1.25
Strawberries, per crate	3.00@3.50
Guavas, per basket	5
Persimmons	4@6
Red Emperors, per lb.	6
Pears, Winter Nellis, per lb	4
Pears, Bartlett	5@7
Pomegranates, 20 lb. box	75
Casaba Melons, large crates	2.25@2.50

Dried Fruit.

Apples, evaporated, ex ch, 9; ch, 8½.

Apricots, ex ch, 11; fy, 8½; ch, 7½.

Peaches, fy, 8½@10½; ch, 7½.

Santa Clara Prunes, 30-40, 8c; 40-50, 7; 50-60, 6c; 60-70, 5½.

Loose Muscatel Raisins, 2-crown 4½; 3-crown, 5; 4-crown, 6.

Beans, Dried.

Limas	5.00@5.50
Pinks, fancy	2.50@2.65
Lady Washington	3.00@3.10
Small White	3.50@3.75
Black Eyes	5.50@6.00

Nuts.

Walnuts, No. 1, soft shell	14½
Do, No. 2	8@10
Do. No. 1, hard shells	12
Do. No. 2, hard shells	10
Almonds, paper shells,	16@17
Almonds, soft shell	14
Peanuts, California	6@7½

Honey.

Honey, comb frames	14@15
White, strained, per lb	6½@7
Light Amber	6
Amber	5
Beeswax	27

Hay.

Barley	12.00@14.50
Alfalfa, local	13.00@13.50
Alfalfa, Northern	11.00@12.50
Wheat	13.50@14.50
Tame Oat	11.00@14.50

Grain.

Selling prices of mill stuffs f. o. b. cars L. A., in quantity, are:

Rolled Barley	1.40
Bran	1.30
Feed Corn Meal	1.55
Shorts	1.45
Wheat, per cwt	1.65@1.70
Cracked Corn	1.50
Oil Cake Meal	2.10
Cocoanut Meal	1.55

TWIN INDUSTRIES.

The greatest opportunity exists for special development of the poultry and dairy industries in California, says a recent bulletin of the California Promotion Committee. It is urged upon the farming people of the State to look into these industries for the profit to be obtained therefrom. California is spending millions of dollars every year for poultry and eggs and Eastern States are reaping the benefit from the laxity of California's citizens. In the past twelve months more than $3,000,000 were sent East for eggs alone, while the money expended in the Middle West for chickens and turkeys to supply the California market probably exceeded that spent for eggs. California is especially adapted for poultry raising in all parts of the State, and as an adjunct to the income from farms of all kinds and especialy fruit farms there is nothing that brings more ready money than chickens. It takes little capital to start when the farm is already going, and the profits are certain and constant. Hundreds of people who are now living on small farms of ten acres or less could make a good living if they would turn their attention to the raising of poultry.

What is true of poultry is also true of dairying. The prevailing prices of milk and butter in California are such that any man who goes into the business, even on a small scale, can make good profit. California's climate is especially a dairying climate. The cattle can spend 365 days in the year out of doors, and the feed is better than is to be found anywhere else in the world. The demand for California butter during the winter months when everything is green is California is so great that it cannot be supplied, and New York alone would take all that could be produced.

San Francisco Markets.

San Francisco, Jan. 31, 1906.

Butter.

Butter is firmer and prices for extras and firsts were advanced a fraction, supplies cleaning up well at the hardened prices. Trading on Change was quite extensive and a good buying interest was displayed throughout the open market. Cheese was firm at the appearing prices.

Fresh California extras	31½
Fresh California, firsts	28
Fresh California, seconds	24½
Eastern extras	25½
Storage, California, extras	25½

Cheese.

California, new	15½
California firsts	14
California seconds	12½
Eastern, Cheddars	15½
Storage, California	14
Storage, Eastern	15

Eggs.

Notwithstanding a material increase in the receipts of Eggs, the arrival being the heaviest thus far this season, the market developed a firmer tone under call on Change and improved prices were quoted for all descriptions.

Egg, Fresh Ranch	34
Firsts	31
California Storage	26½
Seconds	25

Poultry.

Old Roosters, per doz	4.50@5.50
Young Roosters, per doz	6.00@7.00
Hens, per doz	4.50@7.00
Ducks, per doz.	5.00@7.00
Turkeys, per lb.	16@19
Geese, per pair	2.00@2.50

Live Stock.

No. 1 Cows and Heifers are quoted at a fractional advance and calves are also higher under lighter supplies. Hogs are in sharp request and prime light and medium weight stock are quoted higher. Steers, Lambs and Sheep rule very firm at the old standard of values.

Hogs, per lb., 80 to 130 lbs	6@6¼
Hogs, per lb., 130 to 250 lbs	6¼@6¾
Hogs, per ℔., 250 to 350 ℔s	5½c.
Hogs, per ℔., rough heavy	3½@4½c.
Prime Steers, lb	7½@7¾
Cows, per lb	5½@6
Calves, lb	4¼@5
Sheep, ewes, per lb	4@4½
Lambs, per lb.	5@6
Wethers, per lb.	4½@5½

Potatoes.

River Burbanks	65@85
Oregon Burbanks	90@1.25
Salinas Burbanks	1.40@1.75
Sweets, Merced	1.00@1.25

Vegetables.

Onions, yellow, per sack	1.25@1.40
Bell Peppers	12½@15
Chili Peppers	6@7
Cucumbers, per doz.	1.00@1.50
Tomatoes, per box	1.00@1.50
Strings Beans	18@20
Wax, Beans	18@20
Summer Squash, per box	1.00@1.50
Green Peas, per lb	8@10

Citrus Fruits.

Firm prices prevailed for Oranges yesterday under relatively light supplies, especially of the desired sizes, and the general market retained an excellent position in favor of the selling interest.

Navels, fancy	2.50@3.25
Seedlings	1.00@1.25
Lemons, standard	1.50@2.50
Grapefruit	1.00@3.25

Tangerines	1.00@1.50

Fresh Fruits.

Apples were in light supply and firm at the old standard of values, red varieties ruling strong at the top quotations.

Apples, per box, extra	1.75@2.00
Apples, fancy	$1.25@1.50
Cranberries, per bbl............	15@16
Grapes, per box or crate....	1.00@1.25

Beans, Dried.

Limas	4.90@5.00
Pinks	2.00@2.15
Small Whites	3.15@3.25
Black Eyes	4.50@4.75
Bayos	3.50@3.75
Red Kidney	3.50@4.00
Horse Beans	1.65@1.85

Hay.

Barley, new	$8.00@11.00
Alfalfa	7.50@12.00
Wheat	11.00@16.00
Oats	7@12.50

Grain.

Wheat	$1.33½@1.36¾
Barley	1.22
Corn	1.37½
Oats	1.50@1.65
Rye	1.45@1.52
Rolled Barley, per ton...	26.00@27.00
Bran, per ton, ...	19.50@20.50
Feed Corn Meal, per ton..	20.50@30.50
Middlings .. ..½......	26@30
Cracked Corn, per ton........	30@31
Oil Cake Meal, per ton..........	37.00
Cocoanut Cake, per ton........	22.00

Hops.

Grades	8@11

CITRUS MARKETS

The weather and conditions in general have been favorable to the citrus markets during the past week, causing prices to stiffen a little all along the line.

NEW YORK, Jan. 30.—Twelve cars were sold at today's auction. The market is a trifle higher. The weather is favorable.

NAVELS.

	Averages
Del Oro, xc, Sparr Fruit Co....	$2.25
Crack Shot, xf, Sparr Fruit Co...	2.45
Magnum Bonum, J. A. Maddock..	2.40
Flower, fy, F. P. Corson	2.45
Diamond, xc, San Antonio Ex..	2.45
Camelia, xf, C. C. U. Redlands..	2.55
Golden Flower, xf, R. O. G. A...	2.55
Partridge	2.55
Golden Eagle, st, C. C. Chapman.	2.65
Old Mission, fy, C. C. Chapman..	3.25
Old Mission, fy, C. C. Chapman.	3.50
Gold Buckle, xf, R. H. Exchange.	2.60

LEMONS

Independent, fy, Highland..	3.05
Independent, fy, Highland	2.75
Independent, ch, Highland	2.25

TANGERINES

Flower, fy, F. P. Corson	1.90
Old Mission, fy, C. C. Chapman ..	1.75
A. J. H., xc, C. C. U., Lindsay...	1.50

BLOODS

Holly Wreath, fy, C. C. U. Lindsay	2.15
Holly Wreath, fy, (half boxes)...	1.20

Foreign Lemon Sale.

NEW YORK, Jan. 30.—Seven thousand boxes of Sicily lemons were offered at auction today. The cargo is in good condition. The market is 25 cents higher. The next sale will be held on Friday, when 7000 boxes will be offered. Prices realized today were as follows:

Fancy 300s, $2.35 to $2.60.
Choice 300s, $2.20 to $2.35.
Fancy 360s, $2.35 to $2.55.
Choice 360s, $2.20 to $2.35.

One of the finest exhibits of fresh fruits at the Chamber of Commerce Rooms is made by the little town of Escondido in San Diego County. This thriving little community last season paid off its water bonds and besides a fine irrigation system all having been paid for, has $50,000 in school buildings, and no school debts, in fact, the community has no public debt of any nature and is now trying to induce the homeseekers their way by exhibiting what they can grow, and in this effort they are making a great success.

Climate and Crops

U. S. Department of Agriculture, Climate and Crop Bulletin of the Weather Bureau, California Section, for the week ending Monday, Jan. 29.

General Summary:—The weather was clear and warm in nearly all parts of the State, with unusually high temperatures in the valleys and in Southern California at the close of the week. Light showers fell in the central and northern sections early in the week and heavy fogs prevailed in the coast districts at the close. Early grain and grass were greatly benefitted by the warm weather following the heavy rains of the preceding week and growth was rapid. Grain is in very good condition in most places and gives promise of an excellent crop. The damage done to grain fields by recent heavy rains and high water was not serious except in a few places. Plowing and seeding have been resumed and the grain acreage in some sections is being increased. Sugar beet planting has commenced in the San Joaquin valley. Green feed is becoming plentiful in nearly all sections and stock are rapidly improving. Except in Southern California the season is somewhat backward and the rainfall deficient, but the crop prospects are considered very good.

Orchards and vineyards are in excellent condition in all parts of the State and pruning and cultivation are progressing rapidly. The damage by frosts this season has been comparatively light and the outlook is good for large crops of deciduous fruits and grapes. Citrus fruit trees have been greatly benefitted by the recent warm weather. Orange harvest continues in Southern California and shipments are going forward daily.

Eureka Summary.—Weather conditions have been very severe on cattle and many have died from lack of feed, but the past week was more favorable. Grass and grain are making slow growth and stock are improving.

Los Angeles Summary.—Warm, growing weather following the rain, materially improved crops and vegetation of all descriptions. Grain and grass are doing well, with indications of a prosperous season. Almonds are blooming. Oranges are moving freely in some sections and shipments have just been resumed in others.

Veterinary

BY DR. W. J. OLIVER,
318 East Second St., Los Angeles

To the end that this department may be made as valuable to the subscribers as possible, we ask observance of the following: Be sure to state in full the history of the case, location of the disease and the conditions under which the animal has been kept just before and since the disease appeared. Give your name and address, which will not appear in the paper if you so request. No charge whatever is made for such questions as are answered through the colums of the Cultivator, but when an immediate mail answer is wished Dr. Oliver asks an additional fee of $1.00 and will give immediate attention and reply by mail. In such case write Dr. W. J. Oliver, 318 E. Second St., Los Angeles, Cal.

Questions should be in by Monday to be answered in the following Friday's paper.

INDIGESTION.

Editor Cultivator: I have a young heifer that is very loose in the bowels and has been so for a long time; have tried burned flour, laudanum and flaxseed, but she gets no better; can you give me a remedy and oblige.—R. A., Santa Ana.

This is a case of indigestion; you don't state the age of the heifer. Give if two years old 1 1-2 pints of raw linseed oil; 2 ounces turpentine; 1 1-2 ounces laudanum. If older give 2 pints oil and 3 ounces turpentine.

* * *

Editor Cultivator: Will you please ansewer through Cultivator this question? Will a splint cause a horse to go lame? I have a young horse three and a half years old, which has a small splint on one front leg about two inches above the knee joint on the inside of the leg. He shows some signs of lameness. Can I effect a permanent cure by blistering?—P. C. B., Covina.

Splints very often cause lameness; nearly always do if located on back of common or small splint bone.

Blistering will often stop lameness if splint is continually growing it should be pin fired and then blistered.—Dr. Oliver.

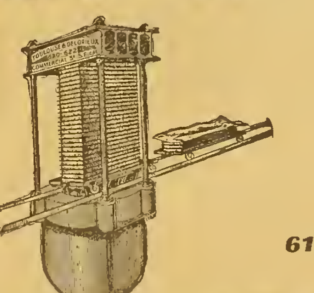
CANCER
IN WOMAN'S BREAST
ANY LUMP IS CANCER
Mailed Free—How to Cure Yourself at Home—No Pain—No Risk.
NO PAY UNTIL CURED—GUARANTEE—JUST SEND YOUR NAME

MRS. E. CROSTHWAITE,
954 Arlington Ave., Oakland, Cal.,
President Golden Gate Woman's Club,
was cured of large cancer of her breast, side and armpit by Dr. Chamley's medicine in 14 days. *Don't doubt, don't delay.* WRITE AND ASK HER You have nothing to lose—everything to gain by doing what I tell you. You can't afford to trifle with Cancer. Life is surely worth sending your name. 130-page book sent free.
My discovery—a Pacific Island plant extract—has cured thousands of Cancers in from 10 to 20 days, after celebrated physicians and surgeons had declared them "as good as dead."
Address, Dr. and Mrs. Dr. Chamley & Co.,
25 Third Street, San Francisco, Cal.
KINDLY SEND THIS TO SOME ONE WITH CANCER

Now Is the Time to Look Over Your Old Plows
Consider them worn out. Come in and see our line of Syracuse Goods, consisting of Syracuse
Disc Plows, Solid Comfort Jr. Sulky,
Solid Comfort Gang, Steel and Wood Beam,
Walking Plows, Steel and Wood Beam Chilled Walking Plows
and the old reliable
Fosmir and Stockton Reversible Gang Plows,
the California Disc Plows, Three Gang and larger,
manufactured by us to stand and do the hardest kind of work
Do not fail to see this plow before buying, also Syracuse Steel Lever Harrows, Spring Tooth Harrows, etc. Have you seen the best Wagon on the market? You have not unless you have cast an eagle eye on the Harrison; and remember the location, which is the important part
L. A. MARTIN & SON 137-143 WILMINGTON ST., formerly Old San Pedro St., LOS ANGELES

RUBEROID ROOFING
The peer of all with 14 years' record for durability and efficiency.
Cheapest because best.
BLAKE, MOFFITT & TOWNE
Both Phones 679 242 to 248 So. Los Angeles St., Los Angeles, Cal.

WINE AND OIL MACHINERY



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Presses for All Purposes.
Complete Plants Fitted Out.
TOULOUSE & DELORIEUX
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Catalogue Upon Application

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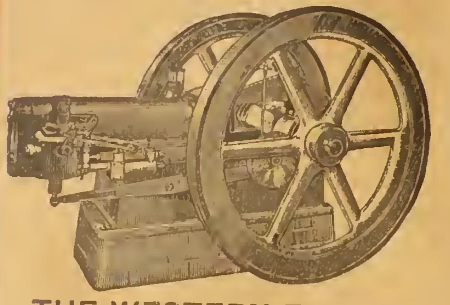
Well Rigs, Hydraulic Jacks, Perforator Knives, Slip Sockets, Rope Sockets, Casing Spears, Mouse Trap Pullers, Subs, Sand Pump, Mud Scows, Head Block Springs, Starter Rings, Link Jars, Revolving Jars, Bits, Diamond Drills, Fish Tail Drills, Wrenches, Temple Screws, Stems, Sinker Bars, Jokers, Well Caps, Swedges. We keep Standard Reins, Rings, Clay Cutters, Etc., constantly in stock, and can fill orders for Sand Pumps promptly.
ASK WELL PIPE MANUFACTURERS FOR THE VULCAN STARTERS. WE HAVE ALL SIZES.
Vulcan Iron and Tool Works, 917-919 North Main St., Los Angeles, Cal.

WATER IS KING
pump your own water
by cheapest known method.
Write A.T. Ames, Galt, Cal. for catalogue

THE WESTERN GAS ENGINE



THE WESTERN ENGINE
Maximum Power at Minimum Cost

"From Factory Direct to User"

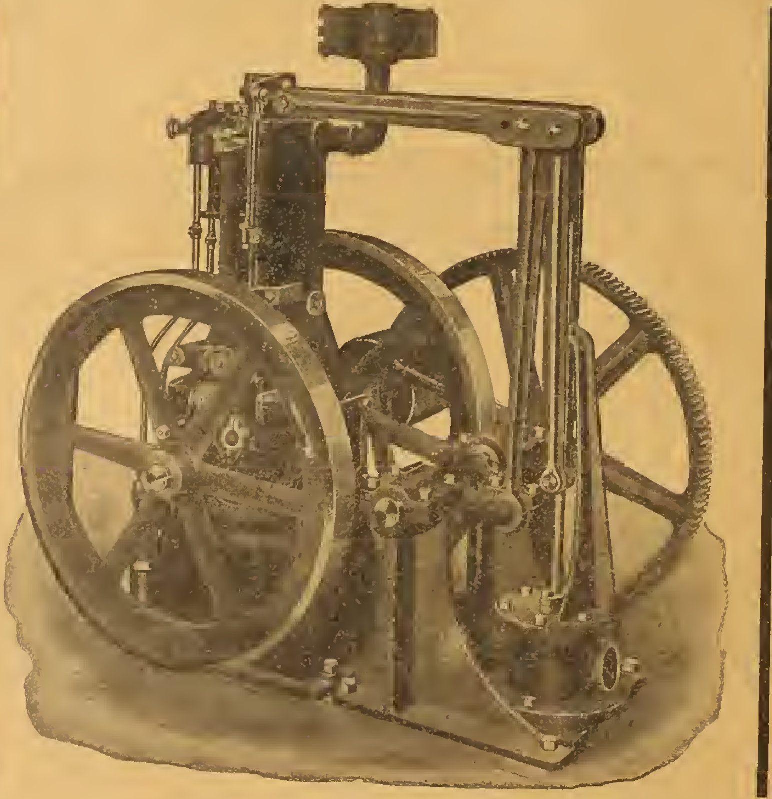
Designed and built by Western experts for Western use with Western fuel. In construction the Western embodies many original, yet practical ideas, which place it in advance of any other make on the market today. The simplest, strongest and best engine for

Irrigation, Power and Electric Plants.
Any Size from 5 to 500 H. P.

Burns cheapest fuel—gasoline, distillate or crude oil—with a saving of 20 to 40 per cent over any other style. Send for Illustrated Catalogue fully describing every detail of construction; tells how and why the Western excels all others; it gives the facts—the proof. Learn what Western engines are doing for others. Send your name today—ask for latest issue, A6.

WESTERN GAS ENGINE CO.
908-932 N. MAIN ST. LOS ANGELES, CAL.

LITTLE WONDER



That's it's name. Little wonder it is that that is its name and that it is so exceedingly popular It's cheap. It's effective. And it's so handy and always ready. Runs the pump, the cutter, the grinder, the churn—any old thing on the ranch. Look it up right away, because you will be interested.

Wm. Gregory 602 North Main Street Los Angeles

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MADE FROM CALIFORNIA REDWOOD OR SELECTED PUGET SOUND YELLOW FIR

WOOD PIPE

WOODWARD PATENT MACHINE BANDED PIPE
WHEELER PATENT CONTINUOUS STAVE PIPE
BORED WOOD WATER PIPE

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Los Angeles Office, cor. Sixth and Mateo Sts. San Francisco Office, 301 Market St.
A booklet, "The Whole Story About Wood Pipe," mailed free upon request

NO, THIS IS NOT AN ARTESIAN WELL, BUT

AN IRRIGATION PUMPING SYSTEM
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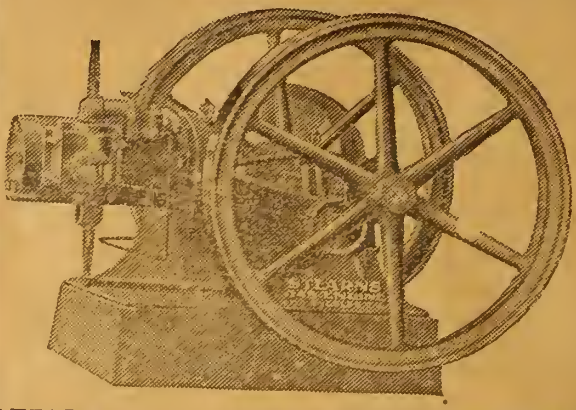
S. J. SMITH MACHINERY CO.
POWER PLANTS, PUMPING MACHINERY AND WATER SUPPLY GOODS
212-214 S. Los Angeles St., Los Angeles, Cal.

STEARNS GASOLINE OR DISTILLATE ENGINE



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Every One Satisfactory

Built for California cheap fuel.

For further information, write

STEARNS GAS ENGINE WORKS 1001-3-5 NORTH MAIN STREET
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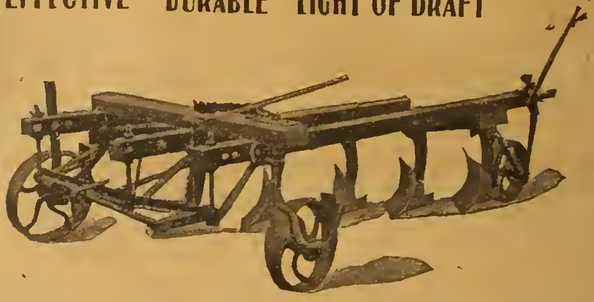
Stockton Reversible Gang Plow

EFFECTIVE DURABLE LIGHT OF DRAFT



This is our regular Plow and Land Shifter and Rear Lever. Land Shifter simple and durable. It is in easy reach of operator and there is no danger of wheel running over foot.

Houser & Haines Mfg. Co.
Stockton, Cal.

The New Pomona Pump

We must not attribute all of the success of the Pomona Pumps to the Pump Head or the part of the machinery above the ground, for there is another part just as essential, and this is the cylinder and valves. Our cylinders are made of the best seamless brass tubing made to our order in the East. The valves are made of the best phosphor bronze and are cast and finished complete in our shop.

These valves are of the most improved pattern, have cone-shaped clappers with ground metal seats. There is only one moving part in each valve and we have never had them clogged with sand. The plungers are furnished with three cup leathers, each made from the best oil tanned leather.

With the New Pomona pumphead using a quick return motion and lap in the plungers, these valves have sufficient time to seat before taking up the load of the water column, consequently there is no hammer or jar. The Pomona Pumps are taking the lead for irrigation purposes and are rapidly displacing pumps of inferior design and workmanship.

Send for catalog and estimates for our new plants.

Pomona Mfg. Co.
POMONA, CAL.

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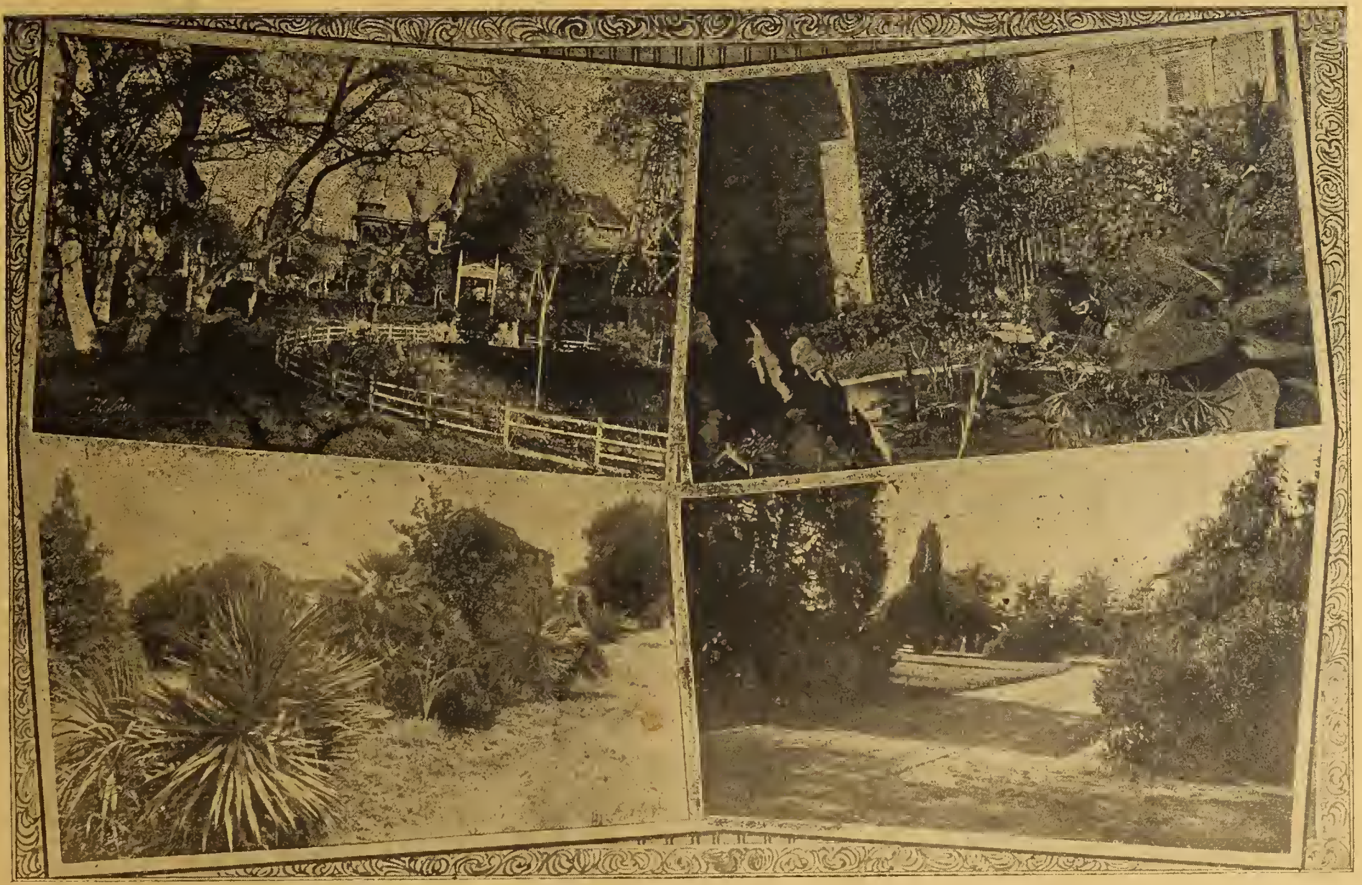
AGRICULTURE
IN ALL ITS BRANCHES

Los Angeles **FEBRUARY 9, 1906** **San Francisco**



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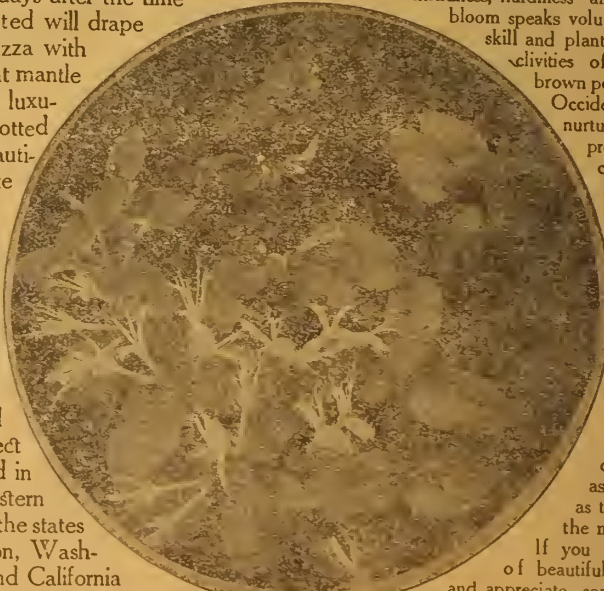

Is a sturdy rapid climber and within sixty days after the time it is planted will drape your piazza with a brilliant mantle of green luxuriantly spotted with beautiful white flowers turning to yellow. It blooms constantly—is never bothered with insect pests and in the Western parts of the states of Oregon, Washington and California holds its foliage throughout the entire winter season.

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CALIFORNIA CULTIVATOR

Vol. XXVI—No. 6 LOS ANGELES, CAL., FRIDAY, FEBRUARY 9, 1906 Subscription $1 a Year

California Vegetable Market Gardening

By O. M. Johnson.

Market gardening in California is being done by the Orientals to the extent that many ambitious Americans have lost heart. And the idea prevails among many of our people that the Chinaman is the best gardener we have. This is altogether wrong. A wrong idea as well as a wrong condition. The Chinaman is ever at it. And with his bare feet he will mulch the soil over the seed bed, and will crawl along between the rows, pulling weeds, digging around the plant. and cultivating and nurturing the plant in ways not persisted in by our own people. He will irrigate, and re-irrigate, often without cultivating until the soil is as hard as a brick. Anything to get a growth, regardless of his treatment of the soil. He is ever at it, and in the sense of getting a growth we might say that he is successful. He will kill the land in one year and for the second year he will say the land is "no good" and want the rent reduced. His income from one acre during a season may be to him "heap good" and to an ambitious American be so small that he can have a mere existence. This, we do not consider good gardening. A good gardener can cultivate the same land year after year without damage, and in many cases the land will improve under cultivation.

The Japanese boys are in the garden industry as they are in international affairs. They are hard to deal with until they have "shown their hands" and we will not attempt it at this writing. But in one thing he is like the Chinaman. He will crowd everything into his market produce that has a semblance of that article, And thereby injures the market. The market is at times bad enough, and we are guilty of helping to make it so, as I shall try to show.

Market gardening has a great future in California. Especially is this so within a radius of twenty miles from the market centers in our large cities. At this time it takes an immense amount to keep our cities supplied with the toothsome garden products. And besides the west has such vast territory where gardens do not thrive and the people in these places are our victims. Until recently the eastern cities did not look to us for winter vegetables. This demand is rapidly increasing and is correspondingly improving winter vegetable values. Conditions are shaping themselves so that these little well watered, fertile spots of our are to be the lands of "milk and honey."

Aside from a pecuniary feature gardening is a pleasure. This may not be so to every one. But he who finds no pleasure in it, he who can not see beauty in a well finished garden product, he who takes as drudgery the work necessary to grow it, had best hunt for some other business. Is a row of rose bushes more beautiful than a row of cabbage? Is a rose more fragrant than a cabbage? We think not when the dinner pot is on. A successful gardener must be methodical, careful and painstaking. Then his market garden will be as beautiful as the flower garden, and he will find pleasure in it.

It is presumed that every one engaged in market gardening is in it for financial results, and we are called upon to deal with the subject as will meet present conditions. We shall therefore direct our remarks to that end and as we understand the subject.

Our transportation facilities are so good that we can ship in large quantities, in competition with many other sections and have a profit over them after meeting them in the market at the same price. Our very rich soil and abundant water supply enables us to produce in large quantities, at a less cost, as compared with many other localities, and again meet them on the market at the same price and have a profit over them. Then it is evident that our strong point is in growing and marketing in large amounts, not regardless of quality, however, but that will be mentioned later on in this paper.

New York Purple Egg Plant.

The winter season affords the best market for vegetables and we can not produce locally some of the extremely high priced delicate articles that are successfully grown at southern foothill points where the winter sun is for weeks at a time almost as warm as our summer sun. We can grow the plants, but proper fruiting is hard to obtain in this cool climate.

Then we must grow soemthing that will thrive in a cool climate, or something that does not require fruitage. And that selection must he made by you. Select according to your own taste and knowledge. Any one can grow some kinds of vegetables at some time of the year, and practically all do so. Even the office man and the professional man in the city on a lot 40x120 feet tries to grow his favorite dish. And usually such things are easily grown at the time he attempts it. All this lessens the demand and cheapens the article. The gardener should not be discouraged at this. For when the hot summer days come his peas will dry up and quit fruiting. Or he gives his tomato vines so much water that they will not fruit at all, and something is happening to the novice all along the line. And here is where the professional gardener gets in his work. There is hardly a time in the entire year that some produce well adapted to our conditions will not command a fair price. We should look to this and plant accordingly. And this brings us to our principal point. We must concentrate our efforts and be specialists. As we now do, we are too much of a common herd. We try to produce all kinds of vegetables and attain proficiency in none of them. Too many of us do not understand the production of the thing attempted nor the time of planting and marketing the same for the best financial returns. It is impossible for one man to master the entire list as to production and marketing. The gardener should select his line, learn to produce an excellent, well finished article or he had better not produce at all. It is a waste of energy. This is an age of specialists and applies to this branch of industry as it does to others. We must be specialists if we would win.

An excellent product is easily marketed while a poor one finds no market at all. Of this we speak advisedly. One must know his soil, climatic conditions necessary to produce an article, when and how to plant, as well as cultivation and irrigation best suited to its development. Time here refers to that period when the probable market conditions will justify the expense of labor necessary to produce it, then produce the best there is to be had.

Knowledge and practical experience will produce the superior article and a reputation for that knowledge and experience together with honesty and decency in preparing the product for market. This reputation is attained by constant care and painstaking. By constantly keeping the same article before the market people at the proper season. No doubt many of us have at times a good product returned on our weekly sheet as lost, while some gardener was on the market getting a good return for his labor. There are certain men near Los Angeles who are depended upon to supply a market with a certain article. These men get the top price and we take what is left. It matters not whether you are marketing by consignment or direct sale. The result is the same. If you have a reputation for some particular line the market people will hunt you up. The jobber, the commission man, the retailer and the consumer all want the best there is. And if you have got it the market is yours. This theory will not always hold good on some of the more common garden products. But as a rule it is true. And we want to emphasize this idea, that the gardener must make a reputation for his produce as a manufacturer does for his wares. Who questions a package of oatmeal on which Pillsbury puts his card? You do not ask your grocer to open the package that you may see inside. You know what is inside because Pillsbury put his name on it. You may stovepipe a consignment of potatoes and dispose of several dollars of small ones but if you are a constant shipper it may prove an expensive deal. This reputation should have three features, viz: To produce an article as the market demands it, to produce it at the time it is most in demand, and to give it that care, neatness and honesty that will demand more of the same. It has been said that a bean is a bean and a pea a pea, and that they will bring the same price if of good quality. Permit us to relate that last season it was our misfortune to have about twenty-five sacks of Stowell's Evergreen sweet corn. It was fine. Almost free from worms and nice, large, well filled ears. It was put on the market in common with field corn and any other product that bore the name of corn. A very few sacks sold for sixty cents, but most of it sold for about thirty-five cents. The remainder of the crop was fed to the cow. Others who had themselves established with the market people for a good quality of sweet corn were able to command a living price even when the market was flooded with it. There is no doubt about this holding good through the entire list. A reputation for being a good gardener will help one but little in marketing. The reputation must be for the product. If we do not concentrate our efforts we can not produce the excellence of quality. we cannot produce the quantity, neither can we know the market. In preparing for market we must not be afraid to cull. Some flower gardener said that it takes a brave gardener to pluck large, strong, rich buds containing prospective beauty. Yet it must be

Continued on Page 143

Deciduous Fruit Culture

BY J. W. MILLS, POMONA, CAL.

PEACHES ON COTS.

Editor Cultivator: Can peaches be grafted on apricots?—A. B. San Jose.

Peaches may be grafted on apricots, but it is not advisable. The union is not good and there is such difference in the rapidity of growth in the two classes that such a process is not considered a success on old or partly grown apricot trees. Apricots are usually budded on peach in the nursery. The trees are then young and they adapt themselves to each other to a satisfactory degree, though even then the union is not always perfect. The peach is a faster grower than the apricot and outgrows the latter while young, but the apricot keeps it up long after the peach gets to its limit. Peach budded on apricot in the nursery, makes a kind of a dwarf tree which comes into bearing sooner than when budded on peach and produces crops that require the severest kind of thinning.

* * *

FRUIT TREES FOR ARROYO GRANDE.

Editor Cultivator: What is the best variety of walnuts for sandy land (free black loam), 60 feet to water; land very wet in winter? What are the best sort of apricots and apples for this section and at what age should they be planted? Will chestnuts do well here?—M. H. S., Arroyo Grande.

Placentia Perfection is considered the best walnut in the districts tried in Southern California and since it has been demonstrated that the best varieties in the coast districts also do well in the interior valleys, we would not hesitate to plant them. In the hot interior valleys of the Sacramento and San Joaquin, Franquett does the best. These are nuts of the highest type. Your description of the land is alright for walnuts. Have trees grafted on the native California walnut and you will make no mistake.

Royal and Hemskirke are reported to be well adapted to your district. Should any new variety have recently been tried and found good in your section, inquiry will soon determine its virtues.

Jonathan, Yellow Bellefleur, White Winter Pearmain, Yellow Newton, Pippin and Early Harvest have a good reputation in your part of the country.

In regard to chestnuts, it is our opinion that they will do well with you, as these seem to be well adapted to all parts of the State. It should be borne in mind that some trees will always bear empty burrs and such trees should be grafted over, taking scions from trees that do bear good nuts.

In planting any kind of a fruit tree, always use one year old trees.

* * *

POLLINATION OF APPLES.

Editor Cultivator:—I have a fine orchard of W. W. Pearmain apple trees about thirteen years old, 460 trees in a square. On the south are joined by Newton Pippins. These bear very heavy. On the east are Wine Saps. There they bear pretty well, but on the two sides where there are no other varieties the crops are light and are getting worse every year. Land is rich, valley land. Now what I want to know is, do they lack pollination? If so, what kind of trees should I graft from? Would Bellefleurs do?—Reader, Lompoc, Cal.

We would advise you to graft over a row of trees on the two sides that refuse to bear. If Newton Pippins do the work we would use them. It might be well to experiment with a few Bellefleurs.

* * *

TOKAY AND CORNICHON GRAPES.

Editor Cultivator:—In the last issue of the "Cultivator" I read an article about Tokay grapes. If J. R. U. of Tropico wants to find a remedy for pale color in Tokay's he will find it in location. I have no trouble in securing a deep red color on our mesa lands, north-west of Compton. I am not in favor of trellising Tokays, as they sunburn very easily. They are naturally a vigorous, upright grower, and by proper pruning from first planting they can be trained into a neat dwarf tree shape with plenty of fruit spurs which I think gives the best protection to the fruit in all stages of growth.

I am also much interested in the growing of Cornichon grapes. Can raise a splendid quality with a fine bloom and color. But the yield is light by the common method of pruning. Does the editor know any method of pruning that will increase the yield with this queen of grapes.

Yours very respectfully,
GEO. D. LEE,
Compton.

We are glad to receive the result of Mr. Lee's experience and hope others will follow his example and "speak up." We never have seen the Tokay trellised "on the inside," but in the desert regions where strong-growing varieties make canes ten to sixteen feet long from the cutting the first year short pruning does not give the best results.

Cornichon has given better results with us when pruned half long, that is, with canes having four or five buds We keep the vines under control by leaving a spur with two buds, at the base of the half-long canes, thus enabling us to continue the process after the entire removal of the half long canes with their summer's growth of brush.

* * *

GRAPES FOR SANDY SOIL.

Editor Cultivator:—Will you please answer the following questions. I have charge of 20 acres along the old river bed. It is too cold for oranges. I want to set it to table grapes. Being a new-comer, I know nothing about such things. What varieties will be best adapted and most profitable? Would you set several varieties? Would it be wise to set grapes that are suitable both for table and wine? What varieties would you recommend? What qualities for table grapes have Mission and Malvoise? What is usually the demand for them? This ground is sand and gravel. What grapes are best adapted to sand? I am told that grapes can be grown without irrigation. What do you know about it? Tell me how to handle the cuttings that they may do their best.—K. L., San Bernardino.

There will be a brisk demand for table grapes in Southern California markets from now on and the wine industry is in a fair way to be supplied from the 10,000 or so acres of wine grapes that are now in bearing in San Bernardino county. This area is being added to by a thousand or more acres every year, hence our advice is to go slow on wine varieties. The fact that large companies control this product makes a difference.

Mission is no longer classed with our table grapes. There are so many varieties that please the eye better

(Continued on Page 139)

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ASPARAGUS CULTURE.

It is not my intention to deal with the history of asparagus or with the different diseases and insects which hinder its growth, but to describe as clearly as possible the methods of growing it.

First in importance is the selection of the best possible land. Asparagus will grow on different soils from a clay to the sandy soil, but the best results have been obtained on a rich sandy loam with a clay sub-soil which has good drainage. Heavy soils bake so that the shoots are unable to reach the surface, while on the other hand the more sandy soil has not enough substance to produce thick stalks.

There appear· to be two ways to secure plants. First by buying seeds and raising the plants, and second, by purchasing plants of a good reliable nurseryman.

In the first case care must be taken that the seed are obtained from a good healthy field free from all disease, and better too that the plants be well developed and of vigorous growth. It is a safe wav to pay a good price for seeds to a reliable house rather than to bother with cheap seeds.

In preparing the soil in the nursery for the seed the ground should be well pulverized and of sufficient moisture to sprout the seed. Care should be taken that the land be well levelled, allowing no place to flood. As soon as the ground gets warm enough, which, in the desert, is early in March, the seed may be sown.

In planting the seed in the nursery the garden drill is a convenient tool, allowing one seed to every three or four inches. It will be found that one pound will produce about three thousand plants.

It is of utmost importance that the nursery be well cared for for the first few months especially. As soon as the shoots are six or eight weeks old they should be thinned, allowing only the largest to remain. Frequent cultivation and hoeing will add greatly to the thrift of the growing plants. On irrigated land they should not be flooded, but watered by a shallow furrow between the rows.

In the following November or December after planting it will be seen that the green foliage commences to turn yellow and die. After it is well turned is the time to cut the tops and prepare the ground for permanent setting.

In buying from a nurseryman, the plants should never be over two years old, and it is better if they be only one year old, as the young plants, when set in their permanent beds are found to make a much more rapid growth at that age. Then, too, if the plants are allowed to stay in the nursery for two years nothing is gained for they need to be two years in their permanent bed before any sprouts can be cut. There a year is lost and the plants are less vigorous.

In preparing the soil for the permanent bed the ground should be well levelled and plowed to a depth of fourteen to fifteen inches. If plenty of manure can be obtained, it would be well to have that well worked in with the soil before planting.

Trenches should then be made twelve inches deep and six feet apart running North and South, in order that when the plants commence to shoot they will have the sun's rays unaffected by shadows. No trees should be allowed to grow very near the field, as they draw the nourishment from the plants besides shading the growth.

The home-grown plants have the advantage of the nurseryman's in two ways. One can choose from his own stock, selecting the largest, best rooted and crowned plants, and selection is an important item. Then, again, the plants, as soon as dug, can be reset at once, while if they come from the nurseryman, you take what is sent and when the railroad chooses to deliver.

After selection, the plants should be set in the bottom of the furrow two feet apart, with the crowns right side up. As soon as one row is set the trench can be filled and the setting go on. Some prefer covering the plants with only a few inches of dirt, and as the shoots grow taller adding a little to the top. In this way the plants can be irrigated in the trench.

The better method is to cover well to the level with dirt, making furrows on each side of set and after irrigating to cultivate thoroughly.

It will be found that asparagus needs constant attention for a good part of the year, and the more intense the cultivation and hoeing, especially in the spring, the better the results.

The amount of irrigation varies in different sections. In the desert once a month regularly and in the hot months twice will probably be sufficient.

For fertilizing in the fall plow a furrow eight inches deep between the rows of plants and half fill with horse, cow or sheep manure. Then plow back the furrow and irrigate.

In this way, especially in the desert, the hot sun does not dry up the manure. If sufficient fertilizer cannot be obtained for a large field, fertilize one section a year.

The first cutting of the grass for market may be made in the spring of the third year from seed. The season should be a short one, as the plants are not yet fully developed—three or four weeks is long enough. As the plants grow older the shoots get stronger, and consequently the stalks larger and more abundant. Eighteen or twenty years is supposed to be as long as it is profitable to cut a field, although many are cut for a longer time.

If it is desired to have white shoots a system of banking should be pursued, otherwise the stalks will be green.

As to the cost of putting out an acre of grass. It depends upon the value of the land, the cost of labor, and the condition the land is in. The amount of profit depends upon the richness of the soil, the amount of attention given to it, express rates, and lastly, the honesty of the commission man.—R. B. Thayer, Thermal.

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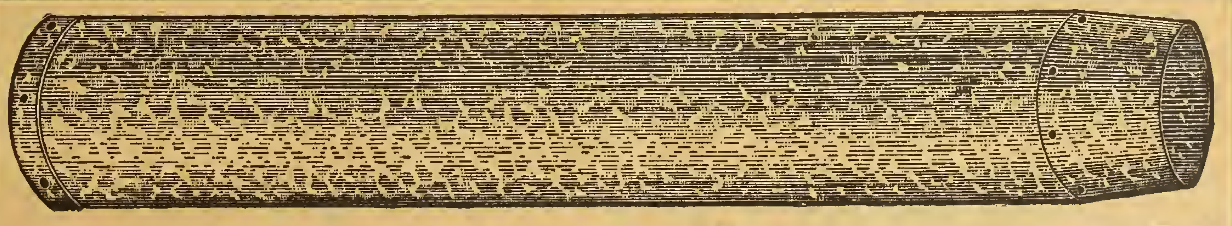

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TREES

CALIMYRNA FIG

There are a great many sorts of Smyrna Figs. We catalogue six kinds, but these do not comprise our entire collection. There is only one variety, however, which five years production on a commercial scale warrants us in recommending it for drying purposes, and this particular variety we have designated as above to give it the distinction it deserves. When you buy your trees from us, you know you are purchasing stock originating from pedigreed trees, which have been producing the highest grade of fruit for a period of years. When you purchase a thousand peach trees, you usually designate what you want. You certainly would not permit your nurseryman to send you a lot of varieties, without labeling them, if you could help it. Well, it is the same with the Smyrna fig, some are early, others late, some are purple, others green. Can you afford for the sake of saving a few cents to take chances on buying trees, which cannot be relied on. We were the first ones to demonstrate the value of this fig, and with our seal we guarantee the genuineness of our trees. Prices lower than ever before.

FRUIT TREES

Are grown on a deep, alluvial river bottom, virgin soil, consequently the root system is as perfect as good soil can make them. Our assortment of apples, pears, peaches, prunes, apricots is more complete than ever.

ORANGES AND LEMONS

Our stock is grown in Exeter, the famous thermal belt of Tulare County. The soil is a rich, deep, black loam, just the kind which develops the highest grade of fruit, as well as the most perfect type of tree. Our assortment consists of all standard varieties of Oranges, Lemons, Pomelos, Citrons, Limes, etc. Carrying out the lines already established in the other branches, we do not confine ourselves to one or two standards and no more, for although it costs money to keep up a stock of many varieties, we want to be on top in this, as well as in everything we specialize in the nursery business.

GRAPE VINES

If you do not know it, you ought to know that we are the largest growers of vines on the Pacific Coast. We are not only growers of raisin, wine and table grapes, but we are also making a specialty of vines grafted on Phylloxera resistant roots. Our great and enterprising neighbor, Mexico, is having its vineyards devastated by this pest, and we have already sold two orders to prominent vineyardists there, who know what our stock is, consisting of eighty thousand grafted vines. How did we get such orders? Because we had pleased our customers before, so they had no hesitation in patronizing us again.

ORNAMENTAL STOCK

Our stock of Texas Umbrella trees branched in all sizes, guaranteed absolutely true to name, is better than ever. We are extensive growers of Poplars, Mulberries, Maples, and all deciduous ornamental trees suited to our conditions.

In evergreens, we have Acacias, Eucalyptus, Palms, Roses, Greenhouse plants, in fact everything you want for your garden.

OUR NURSERIES

Eleven hundred acres in four distinct places. Expensive to run a business so widely distributed. We konw it. Why do we not concentrate all in one place? Because we want to be in the position to grow the best of everything, and to do this, must select the soil to suit the tree, shrub or vine. No use to grow a tree where you know beforehand the conditions are not favorable for its perfect development. That is what twenty-one years of experience does. It places us in the position to grow the very best stock. In making a plea for your trade, we do so, not because we have the cheapest stock, but on the ground that when you favor us with your business, you will get the best which money, brains and experience combined can grow.

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FANCHER CREEK NURSERIES, (Inc.)

GEO. C. ROEDING, President and Manager

FRESNO, CALIFORNIA

California Horticulturally

BY JOHN ISAAC, SACRAMENTO, CAL.

NEW ORCHARD PLANTING.

In spite of the old cry of over-production of fruit, people keep on planting as heretofore, just as though no one had discovered that we are growing too much fruit. The tendency now, in the deciduous fruit sections of the upper country is in the direction of peaches and apples and there will be a much larger acreage of these two fruits set out this season than any other. In fact, the old-fashioned apple, in such sections as are suitable to it, appears to be largely in the lead. There is always a good demand for it and usually at good prices. The great drawback to its production is the Codling Moth but by persistent and judicious work this pest can be checked. Peaches come next, and this fruit is the favorite in the warmer interior sections, where the apple will not do so well. Last season, owing largely to the short crop, there was a very active demand for peaches and prices were something extraordinary. This has indicated a sure demand for this fruit and has given a fresh impetus to its planting, although there has been a very active planting of peaches all over the warmer sections of the northern counties for several years past. The cry of over-production is very much of a bugaboo at all times, for while there will always be occasional seasons of depression in fruit growing, as in all classes of business, it will average with any other business in the long run, and there is one thing certain we shall never produce too many apples and peaches.

* * *

DO NOT FEAR ASPARAGUS RUST

It was the absence of the disease known as asparagus rust, which had proven so severe a plague in the Eastern asparagus sections, which gave its first impetus to the asparagus culture in California. Some three years ago it was discovered that this disease had obtained a foothold in our principal asparagus sections, and for some time it was feared that the industry was doomed in our state, but it has been discovered that the disease can be controlled to some extent, and that while it is troublesome and somewhat expensive to check, the production of this vegetable still leaves a very respectable profit to the grower, and the danger resulting from an attack of the disease is not nearly so severe as was first feared. In consequence there have been some very extensive plantings of asparagus in the bottom lands and islands of the Sacramento and the San Joaquin rivers. In San Joaquin county at the present time work is being prosecuted in the planting of one tract of five hundred acres This will be but one of several large tracts pl[illegible] to this succulent, most of which is [illegible]ed for canning purposes, although very large quantities are shipped fresh to the Eastern market. California has made wonderful strides in asparagus culture in the past few years and there is little doubt but that within the next few years she will lead the world in its production.

* * *

THE STATE FAIR.

The last State fair was a very long stride in the right direction toward making this institution, what it was originally intended to be, a representation of the agricultural industries of the State, a goal from which it had very widely wandered under previous managements, until it had become a mere horse-racing event supported by the State. The first move in the direction of reform was made last fall, but the faith and interest of the agriculturist had been lost and he could not realize that he had any interest in the matter, as a result while a great improvement on most of its predecessors, the State fair was not altogether what could have been wished. The intent to make it really and truly a State fair, however, was displayed, and now Governor Pardee in a letter to the directors, has outlined how it may be brought closer to the producers and made what it was originally intended to be, an exposition of the agricultural wealth of the State, a place where can be brought together the best results of the labors of our producers, and where they can learn from each other the best methods which experience teaches. The Governor has taken the matter of reform in hand and is working with the directors to this end and there is no question but that the State fair will be a thing in which all our farmers, fruit growers and producers generally will take pride, and no longer a mere gambling and horse-racing event.

* * *

MORE EXPERTS TO FIGHT PEAR BLIGHT.

The Valley Development Association at Sacramento has guaranteed to meet the expenses of four additional experts on the pear blight who are to be sent from Washington to take hold of this serious proposition in connection with Professor Waite who has already done much work along this line. It is on Professor Waite's suggestion that this action has been taken, and it is his idea to put as large a force in the field as possible and stamp out the blight in one season, and having stamped it out to take all necessary precautions to prevent its entrance again. There can be no possible objection to getting all the expert assistance available in this matter which is a most serious one for one of our principal deciduous fruit industries, but we question whether the proposition to stamp it out in one season or in any series of seasons is practicable with a hundred times the number of men which we can get at the work. California is a big state and the pear blight has practically covered the whole of it; it is found in all sections where the Bartlett is grown to any extent and it is an impossibilty to exterminate it. It will stay with us as long as we grow pears. The work which can be done by the gentlemen now engaged in it is to teach the orchardists how to fight it, and to this end we may hope for good work from the Washington scientists and also from the University people. When they have done this they will have accomplished much, but the work must then be continued by the individual orchardists and enforced by the County Horticultural Commissioners.

She—Do you believe there are microbes in money, dear?

He—Yes, but they can't get through it any quicker than you can.—Yonkers Statesman.

GRAPE VINES

25,000 Missions, 3,000 Muscat, 3,000 best varieties for table and shipping. All first-class vines, at wholesale prices.

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Strawberries Dewberries

Brandywine Strawberries, Kellogg's strain. Gray's Gardena Dewberries. First-class plants at low prices. C. T. Stanfield, R. F. D. 6, Los Angeles, Cal.

Watermelon Seed I have a small lot of fancy Chilian seed taken from select stock of my own raising that I will sell at 75c per pound. Larger quantities at lower rates.

S. Fairburn, Burbank, Cal.

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All kinds of Grape Cuttings, guaranteed free from disease.

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ORANGE COUNTY NURSERIES

E. S. RICHMAN, Proprietor

Phone Red 151 Fullerton, Cal.

With the Citrus Growers

BY J. W. MILLS

WINTER GREEN MANURING.

When the practice of growing green crops among the orange trees was first advocated, it was condemned by the greater body of growers as impractical. Inconvenience at picking time, extra water was required which would make it too expensive, expense of plowing under and inconvenience of working the land with a lot of weeds to clog the cultivator and so on; there were innumerable things that made green manuring unpopular. So clean culture was practiced almost exclusively by the great body of California orange growers. The practice of growing green crops was urged incessantly by the officers of the farmers' institutes. The experiment stations made exhaustive tests in order to find plants of the family of legumes that would make a satisfactory winter growth. This was one of the timely experiments that served the growers well, for the teachings of the farmers' institutes soon bore fruit and the questions regarding the best crops for the purpose came pouring in. Of a hundred or more varieties, about half a dozen proved to be good winter growers. The Canadan pea took the lead and until the last year or two was almost universally planted. It came in second in the race with large growers who found it difficult to do all their plowing at a time when the pea should be turned under. If this is not done at the proper time the delay will permit the vines to become fibrous and they will not rot enough during the summer to permit of proper cultivation. During the wet winter of 1904-5, all kinds of green crops made a prodigous growth and it was late in the season when the most of these crops were turned under. It was then demonstrated that the pea vine was objectionable for late plowing. It was too stringy and fibrous. The vetch was found to be tender and soon rotted completely.

This feature is a valuable one and has given the vetch a boom with some of the Riverside growers. The main disadvantage with the vetch is that it does not grow as luxuriantly as the Canada pea, but this is partly overcome by early planting. If vetches are planted late in September and given plenty of water, enough to keep them growing, they make a satisfactory growth. A given quantity of vetch is of greater fertilizing value than the same quantity of peas, consequently the difference in the sizes of the two crops is not such a difference after all.

There is a theory among some of the Riverside growers that late plowing has a tendency to cause the dropping of the fruit. The cause is supposed to lie in the effect produced by cutting the fibrous roots at the time when the fruit is setting or near that time. This however, is only a theory and does not agree with the practice which was at one time in vogue among apple growers. They root pruned their trees to force them into bearing, the theory being founded on the supposition that any shock to the trees would cause it to make a last effort to reproduce itself.

The practice of growing green crops has not yet been followed long enough to show what it is really worth. This refers to the orange districts in California, still the effect on the heavier red soils was quite marked after the first year of green crop growing. In one of the Riverside groves which lies on a hillside, a distinct line of demarkaton could be seen where the peas could be seen for half a mile. The strip of land between the rows where the peas grew was a shade darker, being free of large clods. The mass of fine roots of the peas had made the soil mellow and when turned over by the plow the clods fell to pieces. Where there had been no peas growing, the soil was more solid and remained in large lumps when turned over by the plow.

The ill effects of clean culture during the past eight or ten years has been so apparent that all the former objections to green-manuring crops have disappeared, instead of objecting to the inconvenience of having a lot of green stuff in the way, the cry is, "What will give us the largest amount?" Legumes that produce early abundant crops are now demanded.

ABOUT OUR LEMONS.

As the California lemon becomes better known it is coming more into favor. Conditions for lemon culture are different from that of oranges. The interior grows a good long-keeping lemon, with the season for a crop more like the orange. On the coast, with its damper and mild atmosphere the lemon is more a continuous bearer with a climate less favorable to long keeping. By common consent the orange is not quite as successful on the coast as in the interior, and so it comes that the coast is making more of a specialty of the lemon. The market for this fruit, like the orange, is constantly extending. The supply in many cases creates the demand. The luxury of yesterday becomes a necessity of today, and so the market increases year by year and the whole business of citrus fruit growing will ultimately settle on a solid basis in which the element of speculation and extremely high profits will be eliminated and fruit growing on a family scale or in small tracts will afford many a family the health, happiness and means of living they vainly strove for elsewhere.

ORANGE SOILS.

The very best soils for orange culture seem to be those in which iron is largely present which may be known by their red color; foothill soil composed of decomposed granite with clay enough to prevent leaching by the water used in irrigation and having permanent water so far beneath the surface that the tap root of the tree will not be able to reach it. The soil must also be open enough to allow the water to percolate freely so that irrigation will wet all of the soil both laterally and perpendicularly so far as the deepest offshoot of the taproot may wish to extend. This means a warm dry subsoil without which the highest success is unattainable and unless this condition of soil is present sooner or later disease will supervene in the roots. A well drained rich warm foothill soil then is the first essential in California for the best success in orange culture.

Waite, Bailey & Lynch, buy, sell, exchange, repair and install gasoline and steam engines, boilers, air compressors, power pumps, etc. Otto gasoline engines, all sizes, to 200-H. P., better built, more economical, therefore superior to all others; prices and terms that will insure due consideration. 943-945 N. Main st., Los Angeles, Calif.

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And all the leading varieties of Orange, Lemon and Marsh's Seedless Grape Fruit Trees for sale. Are principally two years from bud and very fine. Can furnish from my nurseries at Glendora, Riverside or Redlands, as desired. Address

Redlands Nurseries, E. I. Martin, Prop., Redlands, Cal.

10 per cent gross on every car is being saved by growers using the new patent Cyclone Car Cooler (Famous Intermittent Vacuum Method). Address today Chas. F. Edson, Manager Citrus Cooling Company, 950 West 20th Street, Los Angeles, Cal.

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And all leading varieties of orange and lemon trees, and Marsh's seedless grapefruit. Trees one and two years old. Extra fine and thrifty and no scale. Plenty of fibre roots.

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ONE MILE NORTH OF SAN DIMAS

15,000 Fine Trees three years from seed next spring. No clubs—fine fibrous roots; just the tree to take hold of a new home.

Valencia, Na-Valencia, Improved Navel, Washington Navel Oranges and Nectar Pomelo.

Not touched by the frost.

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Chino ranchers are acquiring comfortable fortunes with alfalfa, oranges, walnuts, sugar-beets, deciduous fruits, onions and onion seed, Egyptian corn, etc. Appointments to visit the ranch under our auspices can be made at any time. Trains leave Los Angeles daily via Southern Pacific at 8:05 A. M. and 5:25 P. M.

Ten-Acre Lots, $75 to $200 an Acre

TERMS—¼ cash; balance 1, 2, 3 and 4 years; 6% interest. An unlimited Certificate of Title may be secured from the Consolidated Abstract and Title Guarantee Co., of San Bernardino, Cal., by all purchasers of Chino Lands.

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Late Valencia and Washington Navels, Lisbon and Eureka Lemons. Guaranteed true to name. No better trees in this State. Lowest market price. Three-year buds, four-year roots. Horticultural Commissioner's certificate. Order early, as good trees are scarce. Inspection invited.

E. G. Wood, Owner, at Nursery or Room 732 Huntington Building, Los Angeles, Cal.

Orange Seed Bed Stock

I have some 50,000 fine seed bed stock for sale. These plants are good color and very thrifty. Absolutely clean and healthy in every way. I will make them caliper 3-16 of an inch and up to ⅜ or ½ inch. Owing to the large size of the plants the packing will necessarily bring the price above the ordinary price of common sized plants, but they will be sold cheap, and if you intend setting it will pay you to see this stock.

J. M. Baker - - - Glendora, Cal.

The Ornamental Garden

BY ERNEST BRAUNTON, LOS ANGELES, CAL.

NATURE STUDY IN COMMON SCHOOLS.

Within a few years Nature Studies have been introduced in our high schools. This is well, but how much better to also have elementary work in the same line in the common schools. All who are deeply interested in the best welfare of the masses are decrying the fact that so many of the farmers' children are rushing to the cities. It is not strange, when we consider the little that has been done in the way of educational laws to interest and instruct the child in his surroundings upon the farm. Even the laudable effort of providing libraries for our rural schools will largely fail in fulfilling its purpose under the present arrangements. A large per cent of our country population ought to remain upon the farms. Then how important that we provide methods and forms of education that will, first inculcate a love for country life and labor and, secondly such a knowledge of vegetable and animal life as will enable him to thus utilize and control the laws of nature, so that all possible financial returns may be obtained.

How much better for child, parent and community, both for the present and for the future, for the scholars to become interested in such scientific study and practical work than even to spend the time largely in reading trashy, blood-curdling novels, gossiping about their neighbors, playing tricks of various degrees of meanness in the community, not to mention the wasted time, spent dancing, playing cards and rehearsing "shady" stories. All thinking, unselfish people are today as never before, seriously pondering over the best and most practicable methods of eradicating or effectually controlling the great and destroying evils abroad in the land, like intemperance and vice in all forms. Whatever may be attempted or accomplished, it is evident that greater and still more strenuous efforts must be put forth to keep the youth, from their earliest perceptions, busy in mind and body, by study and work in all lines as displayed upon the varied pages of the voluminous book of nature. The active, observant, diligent and informed person in the direction herin mentioned, will never become a subject to the grosser habits or evils but the indolent, ignorant and careless person will almost assuredly become a menace to the family, community and the state.

PLANT NOTES.

During the summer palms will need an abundance of water, and at no time should they suffer for moisture. When the plant requires water, the surface of the soil will look dry, and enough water should be given to thoroughly soak the ball of the earth and the roots.

Have you a flower bed so constantly exposed to the intense sunshine that everything seems scorched and valueless? If other plants refuse to grow in this trying bed, plant the portulacca. These plants thrive in the heat and drouth that will quickly destroy many others; their bright flowers are borne in abundance.

The effect of growing aquatic plants upon lawns in tubs or pools is charming. No class of plants could give more pleasure and none require less care. A simple plan is to saw a barrel or hogshead in two parts and cleanse them thoroughly; set them in the lawn; fill one-third of the depth of the tub with good soil, and in this plant the root of the water plant; then fill the tub with water. No further care will be needed except to replace the water as it evaporates.

In order to have palms appear at their best it is necessary to keep the leaves free from dust by sprinkling or washing them once a week.

Plants that are set out in pots should be pinched back frequently so that they may acquire a good form and an abundance of blooming shoots.

Gather bouquets in the morning, while the dew yet adheres to the blossoms. Flowers retain their sprightliness much longer if gathered in the morning than at any other time in the day.

Do not undertake to keep more flowers than can be given good attention. A few choice plants kept in a good, thrifty condition will give much better results than two or three times the number carelessly attended to.

In fertilizing the plants that are in bloom to increase the supply of flowers, apply in liquid form and the result will be immediate, giving larger flowers and richer coloring, as well as greater numbers.

Lack of water is the cause of many plants failing after being planted in the open ground. It is almost impossible to injure large, healthy plants by over-watering in the summer time. Plants should never be allowed to get dry at the roots, though they should not be watered until necessary; then give plenty.

THE HOUSE LEEK.

The houseleek (sempervivum) is frequently cultivated on the roofs of houses in County Clare, Ireland, it being a common superstition that the house upon which it grows cannot be destroyed by fire. The plant is there known as the "man of the house." The old-fashioned plant is very common to all parts of California and but little note is taken of it. However, when one gets "stumped" for a plant that will grow under most discouraging conditions he often turns to the trustworthy old "house leek."

WATERMELON SEED

For years my Chilian watermelons have brought from ten to twenty per cent above the standard market price paid for any other watermelons. This on account of superior seed, which I have always grown myself and have improved each year. I have now the best ever grown, and can supply the same in small quantities, for a short time only. Price $1.50 per lb.

J. C. Ostergard, Burbank, Cal.

100,000 Brandywine Strawberry Plants

The very best that skill and intelligent, up-to-date methods can produce. These are Kellogg's strain and have been propagated from stock that was not allowed to bear fruit. We do not plant for ourselves, nor offer for sale, plants propagated from bearing beds. Growing the fruit, and growing the plants, are two distinct operations with us.

It costs no more to fit the ground, plant and care for the best than the poorest. Visit our grounds and let us show you how vastly different is the result. We grow only Brandywines, as out of 20 varieties tested they have stood the test. From February 1st to April 1st is the best time to plant, we think. Orders will be booked and filled in the order received. One significant fact that may interest possible purchasers: We sold $1563 worth of berries from one acre of this strain of plants last year. Address

Heacock & Hales, Mgrs.
Barbour Ranch, one mile S. E. of Mission,
San Gabriel, Cal.

Cuthbert Raspberry Plants
$1 per 100, $6 per 1000
Gray's Gardena Dewberry
$1.25 per 100, $8 per 1000
A. E. Nelson, El Monte, Cal.

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FROM HEADQUARTERS

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PERENNIAL PHLOX,
CANNAS, DAHLIAS,
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and hundreds of other hardy Perennial Plants. This is also the season to plant Pansies, Asters, Poppies and all annuals.

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All the best garden sorts, in fine vigorous plants, at proper prices.

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LILLY'S BEST ROSES.

Invite the Rambler Family
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The Ramblers are the aristocrats of all Roses. The Baby Rambler (Mme. Levavaseur) is a dwarf crimson beauty which blooms with all the luxuriance of a climber. The Baby is ever-blooming and while it attains a stature of only twenty-four inches it contains as many roses as you would expect to find on a bush five times its size. The Baby is the pet and the pick of the Rambler family.

The demand for the Baby is large and we fear that our supply may not hold out. You and your friends had better place your orders early. Home is not a home without a "Baby."

Prices, one Baby Rambler root 75c; Six, $3.50; Per Dozen, $5.00

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Crimson Rambler—Grandest climbing rose ever grown, presenting its crimson blooms in pyramidal clusters which contrast beautifully with the bright green foliage and keep their color for weeks. Very hardy and will grow most anywhere. Each.........35c

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Philadelphia Rambler—Similar to Crimson Rambler but deeper in color and more double. Each...........35c

Pink Rambler—Like the other Rambler in habit of growth, producing in cluster of from ten to thirty blooms of a shell pink, fading to almost white. Each......35c

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This is a healthy family—baby and all. They do not mildew or become easily a prey to insect growth. They are all sure bloomers.

This family of Ramblers (including the baby) sent to any address for $1.50 charges to be paid by purchaser.

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SEATTLE
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Enclosed is $............ (in money order, draft, 2c stamps) for which send me the following rose roots, by express, charges collect:

.........Crimson Rambler at 35c each .... $........
.... Philadelphia Rambler at 35c each ..... $........
.........Pink Rambler at 35c each .... $........
.........Dorothy Perkins at 35c each............ $........
.........White Rambler at 35c each .... $........
.........Baby Rambler at 75c each .... $........
.........6 Baby at $3.50 for six .... $........
.........Dozen Baby at $5.00 per dozen ....$ ....
.........Collections (one each of Crimson, Philadelphia, Pink, Dorothy, White and Baby) per collection $1.50...................... $........
Total .... $........

New 112 page catalog of Seeds and Plants sent free on request

Name..
Address.. R-2

In the Vegetable Garden

BY ERNEST BRAUNTON

THE KITCHEN GARDEN.

The economic importance of the kitchen garden is but slightly appreciated in California, and as a consequence it is given but careless attention. It is no difficult matter to curtail the table expenses one-fourth by giving a garden of less than one acre the care and attention it deserves. Favored as we are with soil and climatic conditions, fresh vegetables of a large variety can daily be gathered from a well kept garden throughout the entire year. On the other hand, conducted as the gardening operations too often are, the results neither afford profit nor pleasure.

RECOGNITION OF MUSHROOMS.

Now that the wild mushroom season is with us we may be pardoned for cautioning those who gather them to use great care in their collection. Plenty of rules have been laid down for the novice, but most rules have exceptions, which are well known to experts, but the beginner is of course under the necessity of following the rules implicitly, for an imperfect guide is better than none at all.

It is a rule of whist that when one is in doubt he should take the trick, but in the case of fungi the reverse is true. If one has any doubt as to whether a fungus which he has collected is edible or not, he should act on the suppossition that it is not edible, or at least that it is under suspicion, and should be experimented upon with great care.

The different popular tests for distinguishing edible from poisonous fungi, such as, for instance, the blackening of a silver coin or spoon when placed in a mass of poisonous fungi while they are being cooked, are all absoultely worthless. There is no test which can be applied, nor should reliance be placed, at least by the beginner, upon the fact that in some cases the poisonous substances may be removed by cooking in milk or vinegar.

In such cases the danger may be only increased unless care is taken to remove all the vinegar or milk, and, in general, common sense warns us not to eat any fungus supposed to contain an active poison which requires to be removed by special treatment. The eating of such species should be left to the scientific experimenter. On the other hand, it need not be assumed that a fungus is poisonous when it is merely indigestible in consequence of the way in which it is cooked. There a few rules (about a half dozen) upon which the inexperienced collector may rely with some degree of certainty, yet not all of them are absolutely reliable.

POTATO SCAB.

Use two ounces of corrosive sublimate to sixteen gallons of water. Dissolve the poison by first wetting it with an equal amount of water, stirring it until it is all made fine and is thoroughly wetted. If it is to be used at once, it should be turned into about two gallons of hot water to dissolve it quickly. Never use metal dishes. Always take an earthenware or glassware, or wooden pails.

For treating small quantities, barrels, half barrels or tubs may suffice. The tubers may be inclosed in a coarse sack and thus immersed. or they may be poured into the barrel and when ready to be removed, a burlap cloth can be stretched over the top of the barrel and the liquid strained into another vessel, and the potatoes dumped on the ground.

For treating larger quantities, a less laborious method would be to use a long and rather narrow box, or a watering trough can be used. The tubers can be taken out with a wire or perforated wooden scoop. The tubers should soak about one and one-half hours. After soaking three pecks of potatoes to each gallon of solution, if there are many more to treat, about three-eighths of the original amount of corrosive sublimate should be added, together with sufficient water to replace what has been wasted in removing the potatoes.

All wooden vessels that have contained the solution can be made suitable for general farm use again by washing thoroughly in clean water and then in water containing a little sal-soda.

Soak the potatoes when ready to cut the seed. Of the two operations the soaking should preferably be done first, although it is not necessary..

The expense of this treatment is very slight, consisting merely of the cost of the poison and the time of putting the potatoes in and taking them out of the solution. The operator may be employed the balance of the time in cutting the seed.

SEED POTATOES.

Potatoes intended to seed should never be put together in large heaps or pits, but should be spread out thinly in a cool, dry place. If they can be exposed to the sun all the better, as the greening of the tubers hardens them, and renders them less liable to rot. If possible, the seed should be planted before they send out the first shoot, which generally starts from the crown. When this takes place, the other eyes seldom start at all; the result will be only one very robust stalk to the plant, which will produce nearly all large potatoes.

BRANDYWINE PLANTS
Brandywine Strawberry Plants for sale, Kellogg's strain. No better nor thriftier plants grown. Clean of all disease; at bottom prices.
G. W. MULLENDORE, COVINA, CAL.

Seedless Blackberry
The main crop has no seeds. Very early, extra large and very prolific.
Geo. W. Peck, 670 Horton Ave., San Diego, Cal.

Big Success With Our Seeds
Our seeds are superior in quality, and our packets larger in quantity than those sold at the local store. For this reason we want you to give us a trial. Three plump packets of vegetable seeds of your own selection for only 10 cents, including a copy of our new catalogue, out February 15.
F. Gilman Taylor Seed Co., Glendale, Cal.

IMPROVED GARDENA DEWBERRY
And all other kinds of Berry Plants. Nursery Stock for sale.
A. R. Rideout, Magnolia Nursery, Whittier, Cal.

STRAWBERRY PLANTS
(TROPICO BEAUTY)
The very best Brandywine stock at low prices for sale by the grower,
D. Griswold, Box 25, Tropico, Cal.

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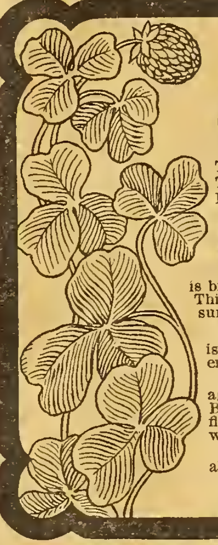
Crimson Winter Rhubarb
OUR SPECIALTY
$1.50 per dozen, $7.50 per 100, $50 per 1000
WAGNER'S NURSERY
PHONES { Home, 1291 / Sunset, Black 1297
Pasadena, Cal.



5 TONS OF GRASS AND BARGAIN LIST FREE
The year of 1905 on our seed farms was one of prodigal plenty. The result is enormous stocks of Northern grown pedigree seed Oats, Wheat, Barley, Speltz, Potatoes, Grasses, Clovers, Timothy seed, etc., etc.
Salzer's Bargain Seed Book
is brim full of bargains in Seeds at bargain prices, way below any ever offered. This Bargain Catalog with sufficient grass seed to grow on your own lands this summer
5 TONS OF NUTRITIOUS GRASS
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Simply send us this notice, sign your name and address and the free package of Grass Seed or Radish, as you select, together with this new, interesting Bargain Catalog with all of its bargain offers, all of its bargain surprises in flowers, vegetables and farm seeds, all the valuable information showing our wonderfully low prices, all will be sent you by return mail postpaid.
If you send 4c. we add a big package of *Cosmos*—the most beautiful fashionable annual flower.
JOHN A. SALZER SEED CO., Lock Box 50, La Crosse, Wis.

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Seed Growers
FORMERLY AT SANTA CLARA, ARE NOW LOCATED AT
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and are prepared to sell their seeds in any quantity, wholesale or retail.
Headquarters for ***Onion*** seed and all kinds of vegetable seed.
Also ***Sweet Peas*** and all kinds of flower seeds.
Also ***Alfalfa*** and all kinds of farm and field seeds.
Seeds of the Highest Quality Only
Write for Handsome New Illus. Catalogue

ARE TWO AND THREE INCHES LONG—
BURBANK'S PHENOMENAL BERRIES
One will Fill a Cup. Dwarfs Giant Dewberry in Size and Excels Raspberry in Taste.
How to Get Hardy Roots.
The leviathan of the berry world is the latest California wonder, Burbank's Phenomenal Berry. Mr. Burbank has said: "It is larger than the largest berry ever grown." To those who know the conservative nature of the man his statements as to size and quality are the best guarantee that could be given.
It is a cross between the California Dewberry and Cuthbert Raspberry.
In color and flavor the new fruit closely resembles—some say "excels"—its rich-hued raspberry parent.
It's the Best Berry in the world —LUTHER BURBANK.
Its liquid juiciness when pressed by the tongue surpasses the full-ripe dewberry in delicate consistency.
And most marvelous of all, to this toothsome fruit has been imparted a firmness which holds it in shipping conditions for days, making it one of the most practical berries for home or distant markets.
GROW IN HUGE CLUSTERS
The vines are inclined to trail. When properly supported, the berries are quickly and easily gathered. They grow in immense clusters of from five to ten huge berries, a sight to delight and amaze. No berry is so economical to pick.
We have grown a limited number of roots in our experiment gardens on Puget Sound, and can supply in quantities of one to one dozen.
The conditions under which these roots were grown insure that they are hardier and more robust than can be obtained from southern nurseries.
Use coupon in ordering. Price (prepaid) per root 35c; per doz. roots $3.
Order Now—The Supply is Limited.
LILLY'S KITCHEN-GARDEN COLLECTION OF BERRY BUSHES
Roots of 12 Standard Berries: 1 Logan Berry, 3 Raspberries, 2 Blackcaps, 2 Currants, 3 Blackberries, 1 Lucretia Dewberry, each one properly labeled, no two same variety. By express at your expense $1.00, prepaid $1.25. You can include one of the Phenomenal Berries at 25c when ordering this collection.
Plant Lilly's Seeds
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Chas. H. Lilly Co.
Portland Seattle San Francisco
Enclosed is $...............(in money order, draft, 2c stamps) for which send me (prepaid)........................ Burbank's Phenomenal Berry Roots, and.........sets of Lilly's Kitchen-Garden collection of Berry Bushes [........prepaid]
Please send me (free postpaid) your Plant and Seed Catalog.
Name ....
Address ....
R-2

CALIFORNIA CULTIVATOR

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Friday, Feb. 9, 1906

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College Farm to be Settled.—The announcement is made that Governor Pardee has called a meeting of the State Farm Commissioners at the Capitol, this week, to determine on the final location of the college farm. This will be interesting reading to something like twenty localities which have petitioned for the farm. The Commission has certainly taken time enough to determine the best location for this important proposition and we feel positive no mistake will be made in the selection which may result. The Cultivator has heretofore discussed this question and given its opinion as to the needs of the farm. Nothing now can be done except to emphasize the importance of making the farm so practical in its operation that it shall be indispensible to the State of California as an educator.

* * *

Planting Fruit Trees.—The season is at hand when the farmer and orchardist should be putting in his trees, indeed now is the time for such work. The Cultivator would like to say a word along this line, especially to new comers to the State, who have had no experience in California with tree men or tree planting.

Every year a large number of farmers and orchardists are more or less deceived by unscrupulous agents of nursery stock, and in such a manner that years elapse before they discover it. For this reason a few words may not be amiss if they bear a measure of warning and advice to prospective planters of trees, and especially to those who have not had experience.

In the first place it is usually well to buy from a local nurseryman, sometimes from a small nursery in your own community. But the proprietor must be a nurseryman in every sense of the word. If he is not systematic and does not keep his nursery in order but has varieties so mixed that the proof of the tree is the fruit, it were as well one should buy from a tree jobber who never grows a tree, but buys where he can and sells likewise. In the southern states there are vast plantations for the growing of nursery stock. These young trees are disposed of at wholesale to tree-jobbers and sold by them as a "nursery company, labelled "northern grown" trees or "home grown" trees. These trees, if true to name, are of course not objectionable, for are yet much of our deciduous nursery stock comes from the south, more in the past than at present, still we are getting considerable, of especially deciduous. The only state where unusual precauiions are being taken is Florida, where the White Fly exists. The claim is often made of the superiority of budded trees and the same as to grafted trees. Experiments carried on in an impartial manner over a dozen years have demonstrated that there is no practical difference between the two. It should not always be charged that the nursery agent is dishonest when he sells trees which are absolutely worthless in a given locality, for his action is often due to gross ignorance. There is a growing practice among nurserymen which may be heartily commended of seeking to be represented by some honest farmer of the community who has the advantage of age and experience and has been successful as a fruit grower. There is so great a range of conditions that it is impossible to make extensive recommendations as to what varieties to plant. If there is a good orchard in the community the best thing to do is visit it and see which varieties are bearing fruit and which trees are most resistant. In this way one can gain valuable information which is far superior to any advice as to varieties which can be offered.

Almost every agent has some bonanza to offer, and which he sells at from five to ten times the ordinary price, some apple, plum, cherry or grape, which has every possible good quality and exactly fills a long felt want. But one word need be said in regard to purchasing such as this, and that is "don't." Life is too short and time too precious, to say nothing of expense, for one to start an experiment station. In almost every case one finds when the glamor has fallen away that he has some scrubby half-breed that is in every way inferior to a standard except in price. He may count himself fortunate if he finds that he has merely paid a fancy-price for a tree of some old, reliable variety.

Opinion varies as to the age at which a tree should be removed from the nursery, but, all things considered, it is better to buy yearlings, provided they have been well grown and are strong. This is especially true with apples. In the case of plums and cherries the same rule may obtain in this state.

The price varies with the age of the tree and there is little difference between the nurseries in this respect. If the buyer makes sure that he is getting standard varieties, well-grown, which are adapted to his locality, he will be safe in this particular, and the thing to avoid is paying a fabulous price for a worthless tree with a high-sounding name. Better by far to buy stock of reliable nurserymen in your own state, or locality, for then you can have some recourse should some unscrupulous agent sell you worthless trees and vines under a guarantee that the stock will be true to name.

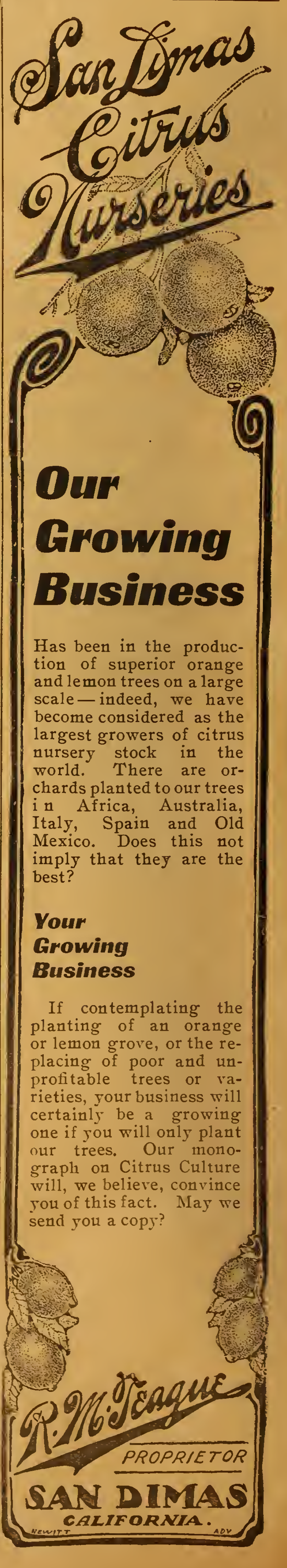
* * *

"School of Thievery."—Archbishop Keane of Clinton, Iowa created a great sensation last Sunday in a sermon delivered in that city in which he is reported as aiming a broadside at certain union laborers and labor unions, at a meeting at St. Patricks Church. He denounced as a thief the man who does not give to his employer the full measure of what he promised to give him, and declared that the labor union which upholds and encourages one of its members in a policy of this kind is nothing more or less than a "school of thievery."

Granting all the learned bishop said to be true, and it is true, he nevertheless might have gone on and included a lot of people in "high life" who are drawing enormous salaries as officers of concerns they cannot render adequate compensation for. They are thieves just as much as the day laborer who charges exhorbitant prices for his work and then soldiers away his time defrauding his employer.

It is not to be wondered at that men of fine intellectual and business character refuse to accept public office where the responsibility is so much greater than that which attaches to insurance managers, or steel or cattle trust presidents, when they see so many men of less ability, with less to do, and under lighter responsibilities, getting from three to twenty times as much. But the wrong is not in the smaller salaries but in the absolutely large ones. And they are unnecessary as well as absurd, and impose a cruel burden upon wealth producing industry, which in the ultimate pays all salaries. This high salary business has become an intolerable abuse in this country and one that obtains in no other country.

The whole country is becoming tired of the burden of paying the tariff which the consumer must pay to render the business adequate to the salaries these men receive. No wonder people are saying, "give us free trade," "our infant industries need no further protection." This high salary business has become a disgrace to the Nation. A life insurance company changes presidents, gets one at $50,000 a year in place of one at $150,000 and the new one be abler than the old. And the present salary is too high and unnecessary. If only one salary were being paid in the country it would be deemed an intolerable extortion, and the place could be better filled for $25,000. A railroad manage at $15,000 a year is made president of a life insurance company at $80,000 a year—knowing nothing about the business—and thinks he is a philanthropist because he takes the job at 25 per cent. less than his predecessor was paid. A manager in a steel mill was getting $5000 a year a few years ago, and thought himself in big luck, now he is getting $100,000 as a steel trust official, and every buyer of steel in any form is compelled to contribute toward that extra $95,000. It's an outrage and is developing socialism and its vile opposite, anarchy, faster than any other one thing.



Our Growing Business

Has been in the production of superior orange and lemon trees on a large scale—indeed, we have become considered as the largest growers of citrus nursery stock in the world. There are orchards planted to our trees in Africa, Australia, Italy, Spain and Old Mexico. Does this not imply that they are the best?

Your Growing Business

If contemplating the planting of an orange or lemon grove, or the replacing of poor and unprofitable trees or varieties, your business will certainly be a growing one if you will only plant our trees. Our monograph on Citrus Culture will, we believe, convince you of this fact. May we send you a copy?

R. M. Teague
PROPRIETOR
SAN DIMAS
CALIFORNIA.

NEWS OF COUNTRY LIFE IN THE GOLDEN WEST

HORTICULTURE.

Nothing that grows in the temperate or semi-tropical zones is out of place in California. Pineapples, even, are being cultivated in Southern California.—Oakland Enquirer.

The value of Southern California output of dried fruit for 1905 is estimated at $6,000,000. Under a good demand, the market has in all lines except raisins grown steadily firmer.

.Sheridan Harding of Wheatland, last year shipped 1200 boxes of cherries and received from $1.75 to $2 per box making his returns over $2000 for less than ten acres of cherries.

The National Orange Company through its attorneys, Purington & Adair, have brought suit against the California Citrus Union to restrain it from using orange boxes and wrappers on which is printed the words "National Orange Company."

Articles of incorporation of the New Orange Growers' Association, of Orange were filed with the County Clerk this week. Capital stock is fixed at $20,000. The organization succeeds the Independent Association, which recently dissolved.--Orange News.

Redlands shipments to January 30 were 949 cars. The Review says of the situation: 'Fifty-seven cars of oranges were shipped last week from Redlands. This brings the total for the season of 1906 to 950 cars, and is about 500 cars less than was forwarded at this time last season.

The Riverside Press of January 30, says: "Local packers are looking with interest to the showing to be made by the Salt Lake in transporting the fruit east. The eight cars secured last week will be a test, and now that the ice is broken, it is likely more will be secured right along."

Sheridan Harding of Wheatland, Yuba county, has ten acres of almonds, and he states that his average crop is eleven tons, with an average price of 12½ cents per pound, giving him as an average price per annum, $2750. He says he has not had a failure in the last eight years.

The Redlands Fruit Association is now making its payments on account of its Christmas fruit, paying for Extra Fancy $2.098 per hundred; Extra Choice, $1.808; Standard, $1.563; Culls, $.423. For their Thanksgiving pool they paid for Extra Fancy $2.24 per hundred; Extra Choice, $2.13; Standards, $2.07.—Citrograph.

California has a million more apple trees than Massachusetts, eight times as many pear trees as Maine, Massachusetts, Connecticut and New Hampshire put together; twelve times as many cherry trees as these states, and 100,000 more peach trees than Delaware, Maryland, Masachusetts, Connecticut, Maine and New Hampshire.

The San Francisco Call prints the following from Chicago, dated Jan. 23: "The juicy orange and the fig may be made the objects of a boycott by the Chicago Federation of Labor at its next meeting. Secretary Locketts received a communication from A. Hierom Shera of the California State Federation of Labor today, asking the Chicago labor organization to discriminate against all fruit packed by Japanese labor."

A writer from San Bernardino county to the "New York Sun" makes this suggestion as to the present method of shipping: "The orange industry is credited with having a higher average degree of intelligence behind it than many other similar industries, but when one investigates the diverse marketing methods and the lack of unity among the growers, grave doubts arise as to whether or not this is true. If the results of the unbusiness-like methods of the growers were visited only upon those who pursue them, it would be different, but all have to suffer to a more or less degree..

The question whether the Fresno Raisin Association will dissolve permanently is agitating its members at this time. The Hanford Sentinel says that Kearneyism seems to be an important factor in the question, as Mr. Kearney has friends enough to block any agreement, and the enemies of Kearney will have nothing to do with the business as long as it remains a factor in the situation. So it looks as though the question of a raisin combine will have to be threshed out again in the same old manner. The raisins now on hand are moving out quite rapidly now, and no doubt will be all consumed before the new crop is ready."

AGRICULTURE.

California Farmers were the first to use the combined harvesters run by a traction engine, cutting a swath forty feet wide, and threshing and sacking grain as it proceeds.

The largest watermelon was raised in Orange county, weighing 150 pounds and measuring five feet six inches in length and four feet nine inches in circumference.

All the farmers in and around Ontario and vicinity are busy in the fields of which many thousand acres are being put into grain. It is anticipated that the crop this year will be a large one.

The Standard says: "The Imperial farmers are to be congratulated, for, by a strange coincidence, at the present time, when every man in the valley is fencing his place with barb wire or planning to do so, it is cheaper than at any prior time in years.

The American Beet Sugar Company is doing some extensive tile draining on its moist lands about Chino. Some 11,000 feet of tile, mostly of six inch size, but some of four inch, has been laid, by which about 400 acres will be drained.—Chino Champion.

Three carloads of chilli peppers have been shipped from Anaheim the past week, having moved at 12 cents a pound, or $30 for a large sized sack. A local bank official has looked up the pepper sales for this season and has the estimate of those to move. He says the Anaheim crop will sell for more than $100,000.—Gazette.

J. A. Vail of the vegetable union has finished moving the crop of sweet potatoes from this section, having recently sent out eight carloads to the northern markets and a large number of cars to Los Angeles in small, daily lots. Recent shipments have brought good returns but the demand was not active several weeks ago when the local crop went in competition with potatoes from Northern California. Mr. Vail also shipped a car of squashes to Los Angeles yesterday.

California has 140 fruit and vegetable canneries, and the value of its products in this line is greater than of the twenty-four states of Ohio, Michigan, Indiana, Illinois, Wisconsin Minnesota, Iowa, Missouri, West Virginia, Virginia, North and South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Idaho, Texas, Nebraska, South Dakota, Utah, Colorado Kansas and New Mexco. —S. F. Chronicle.

A San Francisco dispatch of Jan. 30th, says: "It is asserted that a combine of millers and grocers has been organized to boost the price of flour. The Globe, American and Del Monte milling companies have issued orders to grocers raising the price of flour about sixty cents a barrel, commencing January 25. The department stores threaten to break the game by the introduction of Oregon and Washington flours and underselling the regular grocers in the combine. It is alleged that the State Grocers' Association is back of the movement to raise prices and make flour a profitable commodity instead of a staple handled on a narrow margin."

LIVE STOCK.

The new creamery at Glenn recently erected at a cost of $7,000 is to be put in operation soon.

Says the Monterey Cypress: 'Glanders has broken out among the horses at the Presidio and at present fifteen horses are afflicted.

The stockmen in parts of San Diego county are wishing for more rain. The grass is doing well, but it needs additional moisture to strengthen the roots.

John Lynch, the short horn breeder whose card appears in another column, has twenty head of young bulls and twenty-six head of bull calves for sale. These are the "milk strain" short horn and a high class lot.

Prof. Spellman of the Agricultural Department declares that it is possible to dehorn a whole breed of cattle by introducing into the herd a single pure polled animal, although this would require more inbreeding than is desirable.

The Ontario Record states a movement is on foot to raise a fund to be used in the extinction of the festive coyote. Since there has been no bounty offered for some time, for the scalps of the yellow curs, they have so increased in numbers as to be a nuisance to those of our citizens who are endeavoring to add to the number of their feathered stock.

MISCELLANEOUS.

Long Beach capitalists are figuring on building a hotel at Anaheim.

A citric acid factory is one of the proposed improvements talked for Ontario.

The Experimental Forestry Company is planting about 11,000 young Eucalyptus trees on the ranch of the company near Hanford.

A company has been formed for the making of concrete blocks for building purposes. The capital stock will be $100,000 and the headquarters at Hollister.

Fred Wells, for fifteen years editor of the Hueneme Herald of Ventura county, died of Bright's disease Saturday, January 20. He was a native of California.

Report comes from Colton that the California Portland Cement Works at that place are to be enlarged to four times the present capacity, the improvements to cost $250,000

Governor Pardee has appointed Judge Max C. Sloss of San Francisco a Justice of the Supreme Court to succeed Justice Van Dyke, deceased. His salary will be $8000 per annum.

By the payment of $27,000 principal and interest, $283.69, last Wednesday, Sonoma county wiped out the last trace of her bonded indebtedness and is able after forty years to start with a clean financial page.

Trout fishers who have Ventura county in view will please bear the fact in mind," says the Press, "that if they fish in Ventura county before May 1st they will be in danger of being haled before the courts."

The California Petroleum Refinery of San Francisco has purchased 115 acres of land near Avila, San Luis Obispo county, here it will construct a refinery and 100 cottages for employes. A million dollars will be invested.

The Sacramento Bee's special correspondent from Reno, Nev., says: "P. Beveridge Kennedy, Professor of Botany in the Nevada State University, says that escaping artificial gas is killing hundreds of valuable trees throughout the city of Reno.

The Southern Pacific Company has let a contract to build a railroad twelve miles long from Orland to Hamilton, the new sugar town that is to grow up for the sugar factory that is to be built in that section of the State.—Salinas Index.

While hunting near Santa Ana river in Ocean Park recently a sportsman shot and killed a rabowl. The animal which resembles in some respects a squirrel and has also the appearance of an owl, is a rare species of animal life and is seldom found north of Brazil.

The municipal water works of Kenosha, Wis., made $25,000 profit last year, which was so much saved to the people. Isn't it a better plan than to pay out $25,000 to swell the profits of non-resident stock holders to be spent in speculation elsewhere or in travel in Europe?—Oakland Enquirer.

The Short Line Limited is the name of the finest train in the west to be run daily between Los Angeles and San Francisco, commencing March 1. It will be run on the fastest time yet made between San Francisco and Los Angeles, leaving each terminal daily at 9 a. m. and reaching its destination at 10.30 p. m.

People who are at the Santa Fe depot in the morning, says the Hanford Sentinel, "will be convinced that the town of Corcoran is indeed on the map. Every morning there is a large number of passengers taking the train for that little town which is an example of what money and enterprise can do for a community."

Charles Wortell, a rancher and winemaker of Lincoln, is having some trouble with the Federal authorities over an old distillery plant on his place as a result of the recent visit to his ranch of a couple of internal revenue officers. He is accused of operating the distillery without a license, and the plant and a small amount of liquor has been confiscated by the Government pending a settlement of the difficulty.

Underflowing the city of Sacramento, says the Union, at a depth of nearly 200 feet, it appears, is a stream of pure, clear water, sufficient in quantity some experimenters declare to supply any reasonable demand upon it, and of a quality that makes it a most desirable and valuable acquisition. For centuries, probably, it has filtered through the gravel beds that serve as a foundation for the city, and while experiments have from time to time demonstrated that such a condition prevailed, the test of its practical and commercial worth has not been made until very recently.

The increased production of fuel oil in California has dealt a severe blow to the coal miners of the Coast region, according to a report just issued by the Geological Survey. "This oil boom has affected the production of lignite in California and Oregon," says the report, "as well as the production of bituminous coals in Washington, in much the same way as the production of Texas oil has affected the coal mining industry of Arkansas and Indian Territory. So serious has this competition become that the Coos Bay mines in Oregon may be closed down at an early date."

LINER ADVERTISING

Advertisements in Liner Column will be charged 1¼ cents per word. No advertisement taken for less than 25 cents. Eight words to a line.

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FOR SALE—PUMPING OUTFIT. A NO. 4 Byron Jackson pump and 15 H. P. gasoline engine. Address J. B. French, Secty. Orange Grove Tract Water Co., Pomona, Cal.

Live Stock and the Dairy

BY MRS. MINNA E. SHERMAN, FRESNO, CAL.

MILKING THE COW.

Things for Milkers to Think about—Too many milkers regard the work of milking as a dirty, disagreeable task. The work has resolved itself into nothing more than the manipulation of the udder, and is to be hurried through with as quickly as possible. The element that takes from all drudgery its unpleasantness is wanting. That element is thinking along lines tending to improve the work. In the processes that attend the milking of a cow there is enough to cause the milker to study seriously the work that leads up to the making of a perfect pound of butter. Milk as it is drawn from the udder is nearly free from bacteria. Could it be kept in this condition it would keep for many hours before any perceptible change would take place.

The first bacteria enter during the time of milking and are naturally from the cow and her surroundings. The manipulation of the udder works off hair, particles of skin, and in many instances particles of manure that adhere to the hair and udder. All of this material finds its way into the milk pail and carries with it great numbers of bacteria. The warm temperature and the presence of a congenial food supply that is in just the right physical condition cause these bacteria to multiply very rapidly, and unless something is done to check their growth souring or other evidence of decomposition will take place in a very few hours. The rapidity with which these changes occur will depend almost entirely upon the temperature at which the milk is allowed to stand and the number of bacteria that find entrance to it. These facts are constantly in the mind of the careful dairyman. He knows that the first step is prevention. The work of milking should be performed in such a way that few bacteria will find their way into the milk. The milk should be cooled quickly and thoroughly immediately after it is drawn in order to check the growth of those bacteria that will, under the best conditions, find their way into it.

* * *

A bunch of Porkers six months old fattened on alfalfa at Corcoran, Kings County

Cleaning the Cow.—All this leads to the conclusion that the cow must be carefully cleaned. This is as good for her general physical well-being as for the protection and purity of the milk. The card or the currycomb thoroughly but gently applied will remove all coarse dirt, straw, or other matter clinging to the animal that would eventually find its way into the pail. Aside from carefully cleaning the cow with the card or the currycomb, the parts immediately surrounding the udder and the udder itself should be wiped with a damp cloth. This had best be done just before the milking begins, as it will remove most of the dust which may still remain after carding and dampen that which is not removed, so that it will not fall into the milk pail. If the milking is to be done in the barn there are some other important things that need attention. The air in the milking place must be free from dust—it matters not whether the dust comes from the floor as a result of its recent cleaning, or whether the animals have stirred up the dust in coming into the stalls, or whether it is caused by the distribution of feed in the racks and boxes. Dust in the air will find its way into the milk, bringing with it great numbers of bacteria. If the floors are dusty they should be lightly sprinkled, so as to prevent the stirring of the dust. Feed should not be distributed just before or during the milking hour.

* * *

Clean Milkers.—Another thing of importance in connection with milking is the condition of the hands and clothes of the milker. He should be clean personally, and should be required to go about his work in clean clothes. The milking should be done with dry hands. The habit of some milkers of wetting their hands with milk just as they begin is a filthy practice and the cause of much bad milk and poor butter. There is something in the presence of a milker in a white suit that calls for clean work, particularly if he is required to keep the suit clean while about his work. For this reason, as well as for the esthetic effect, many dairymen require their milkers to be dressed in white. The same principle is true in regard to whitewash on the interior of the barn. A carefully whitewashed wall shows off cobwebs to their advantage, and they will usually be removed. There is something out of place if part of a building is kept clean and fresh—as a whitewashed wall, for instance—and other parts are a mire of filth. Whitewashed walls go with clean floors, and the two with a white-clad milker will usually insure clean milk.

CARE OF CREAM ON THE FARM

In a recent bulletin of the Wisconsin Station No. 129 discussing a number of creamery problems. E. H. Farrington makes some statements regarding the care of cream on the farm which are of special interest "to the creamery operator and dairy farmer in sections where farm separators have been introducel for separating the cream from the milk. Attention is called to the fact that these machines are now comparatively new to many farmers, and the change from daily delivery of whole milk to sending cream once or twice a week has made considerable difference in in the methods of handling the milk and cream at the farms.

"The problem of caring for the cream so that it may be delivered to the creamery in good condition is a serious one, because it has an important bearing on the quality of the butter. In many cases butter made from cream not properly cared for does not sell for the top market price, and since there is a growing tendency to sell butter on its merits, giving only the price its quality deserves, there will be difficulty in disposing of butter made from a poorer quality of farm separator cream at prices equal to those of butter made at whole-milk creameries. Considering the question, however, from the mechanical side of the butter-making process alone, there is no good reason why farm separator cream should not be equal to, if not better than, that separated at a factory with power separators.

When milk is separated at the farm immediately after milking, the cleanest and sweetest cream possible ought to be obtained; it certainly should be better than that skimmed by a factory separator from milk which is 2 to 20 hours old, and on this account a better butter should be made from the farm separator cream.

The usual causes of defective butter from gathered cream are: First, unsuitable places for keeping the cream, and, second, holding the cream too long before it is collected by the cream gatherers. A perfectly clean, sweet, and satisfactory cream is produced on many farms in the State and delivered in good condition to either a retailer, an ice-cream maker or a creamery. There are, however, places where tainted and defective cream is found, and in some cases it is being mixed with cream of a better grade. This is hardly fair to the producer of first-grade cream, and in order to raise the standard of the entire product to a grade equal to the best the following suggestions are offered as a guide to persons not familiar with proper methods of caring for cream:

(1) Place the separator on a firm foundation in a clean, well-ventilated room where it is free from all offensive odors.

(2) Thoroughly clean the separator after each skimming. The bowl should be taken apart and washed, together with all the tinware, every time the separator is used. If allowed to stand for even one hour without cleaning there is danger of contaminating the next lot of cream from the sour bowl. This applies to all kinds of cream separators.

(3) Wash the separator bowl and all tinware with cold water and then with warm water, using a brush to polish the surface and clean out the seams and cracks; finally scald with boiling water, leaving the parts of the bowl and tinware to dry in some place where they will be protected from dust. Do not wipe the bowl and tinware with a cloth or drying towel; heat them so hot with steam or boiling water that wiping is unnecessary.

(4) Rinse the milk-receiving can and separator bowl with a quart or two of hot water just before running milk into the separator.

(5) Cool the cream as it comes from the separator or immediately after to a temperature near 50 degrese F., and keep it cool until delivered.

(6) Never mix warm and cold cream or sweet and slightly tainted cream.

(7) Provide a covered and clean water tank for holding the cream cans

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and change the water frequently in the tank so that the temperature does not rise above 60 degrees F. A satisfactory arrangement may be made by allowing running water to flow through the cream tank to the stock-watering tank.

(8) Skim the milk immediately after each milking, as it is more work to save the milk and separate once a day and less satisfactory than skimming while the milk is warm, since the milk must be heated again when saved until another milking.

(9) A rich cream testing 35 per cent fat or more is the most satisfactory to both farmer and factory. The best separators will skim a rich cream as efficiently as a thin cream and more skim milk is left on the farm when a rich cream is sold.

(10) Cream should be perfectly sweet, containing no lumps or clots when sampled and delivered to the haulers or parties buying it.

There is a good demand for sweet cream and it can easily be supplied by keeping the separator, tinware, strainer cloth, and water tank clean, and the cream cold. The preceding recommendations when followed will pay well for what some may think is "a lot of extra bother."

BUTTER MAKING ON THE FARM.

Edwin H. Webster, chief of dairy division, Bureau of Animal Industry has prepared a bulletin, No. 241, on the various phases of making butter. He goes into the subject exhaustively and the suggestions made are of exceeding value to dairymen all over the country. Of course the reference made to climatic conditions existing in the middle west is not applicable to California, for we have no moist, sultry weather to spoil our cream, as is the case there during dog days, but we have nevertheless, other impediments to dairying which the bulletin referred to offers reasonable solution. A portion of the bulletin is here given:

Causes of Changes in Milk.—Everyone is familiar with the changes that often take place in milk, and those which occur in the spoiling of fresh meats and vegetables, though the causes that produce these changes may not be apparent to the observer. It is also a matter of common experience that in hot, moist, weather these changes take place with much greater rapidity than in cold or dry weather. Everyone who has handled milk has learned that cleanliness in everything that comes in contact with it is one of the essential factors to success. Cold storage, such as may be supplied by the common household refrigerator, is also necessary for the keeping of milk and other perishable products in hot weather.

The cause of the spoiling of fruit, vegetables, meats and milk was found to be minute plant life, or germs, called bacteria. It was discovered that these minute forms of life—so small that it takes a powerful magnifying glass to see them—were the cause of all decomposition. A study of their life, habits of growth, the food on which they lived, the kind of substance on which they could develop, and the temperatures most favorable to their growth revealed the scientific necessity for observing perfect cleanliness in all dairy utensils and for keeping the milk cold. It was found that bacterial life is in evidence everywhere, and only awaits the proper food, moisture, and warmth to cause the bacteria to multiply very rapidly. Just as a grain of corn grows when given proper moisture and warmth, so the germ life that finds its way into milk utilizes the food and warmth found there to grow and multiply, causing decomposition.

It has been found that when milk or other perishable foods are kept free from bacteria they will not spoil; and, further, that foods of this nature when kept at low temperatures are very much longer in spoiling, altho' they may contain great numbers of germs. When milk and other products are heated to a high temperature the bacterial life is destroyed, and the products will keep for a long time if no additional bacteria gain access to them.

The application of this knowledge forms the greater part of the science of butter-making. The great amount of poor butter made on the farm indicates that some or all of these facts have either been misunderstood or ignored. Fortunately many species of bacteria known to exist are not harmful in milk. Many are beneficial in that they develop flavors desirable in good butter. From this it appears that the knowledge of methods necessary to check or destroy bacterial development is but a part of the butter maker's art. He must know how to promote the growth of the desirable kinds. Up to the point of ripening the cream the whole process is one of retarding the development of bacteria by cleanly methods and the use of cooling devices. When the ripening process begins the growth of favorable kinds is encouraged.

FEEDING COWS.

Editor Cultivator:—I am feeding a bunch of milk cows exclusively on alfalfa hay. In an adjoining yard we have some that we are feeding on corn fodder. Whenever the corn fodder cows are being fed the alfalfa fed cows show a great anxiety to get at the fodder, and when they get a chance to get into the yard they eat up the corn stalks the other cows leave. Is not alfalfa, fed exclusively, too hard on their kidneys? Would it not be better to feed some other feed in connection with it? Would not the butter results be better?—P. B. D., Bakersfield.

We have never heard of any bad results from feeding milk cows all the alfalfa hay they will eat. It might be best, however, to furnish your cows some roughage in the form of wheat or barley hay. If they eat it up clean and all the alfalfa you give them as well, I would conclude that you are not supplying them with all the feed that they need. With very heavy milkers you will find it necessary to feed some grain to get the best results even when alfalfa hay is fed for roughage. I would suggest that you feed a grain ration of two-thirds corn and one third bran to your heaviest milkers, and note whether they give you an increased flow of milk. The per cent of butter-fat in the milk of your cows will be varied by the kind of feed given. The only way to increase the butter product is to increase the quantity of milk given.

Advertising Column for Members
OF THE
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Having sold my ranch I am forced to sell Golden of Biltmore. 60082, a grandson of Golden Lad's. Golden of Biltmore is one of the best, *if not the best* sire on the coast, several of his daughters less than two years old selling for over $200 each. Highest bidder for next sixty days takes him. If everything is not just as represented, I will give anyone the ***bull free of charge. I sell on merit.***

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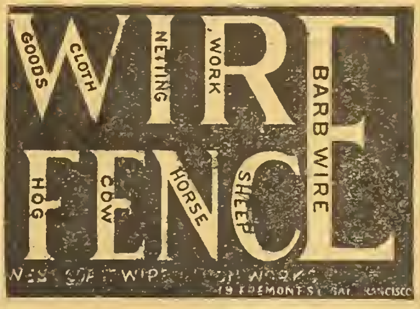

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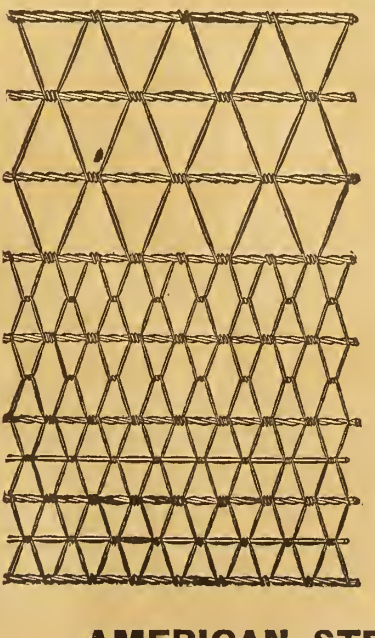

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Profit in the Poultry Yard

BY MRS. A. BASLEY, HOLLYWOOD, CAL.

THE FERTILITY OF EGGS.

I know of nothing much more discouraging than to fill an incubator full of eggs, and after a week on testing them to discover a large number to be infertile. This is just the season for these unhappy discoveries and a talk on the causes of infertility may be not only seasonable but helpful.

Perhaps by interrogating Nature we may be greatly assisted in our search for the causes. Wild fowls' eggs are rarely infertile and therefore many say as wild fowl only mate in pairs as a rule, that in our poultry yards we are mating too many females to one male, that is doubtless one cause especially with the heavier breeds. The rule is to mate four to eight females of the Asiatic breeds to one male, from eight to ten of the American breeds, and twelve to fifteen females of the Mediterranean breeds to one male. This is a fairly good rule, but much depends upon the vigor and the age of the birds, the weight and size also of the male. As a rule the male should not be above the weight given in the Standard for this breed nor should the female be below the standard weight.

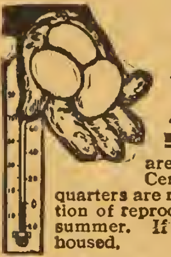
But to return to Nature, the time when the wild birds all mate is in the spring and early summer, then the wild geese and ducks return to their breeding grounds and all nature is growing and producing. It will be found that in our poultry yards March April and May are the months when fertility is the highest. To have fertile eggs in our yards we must as far as possible copy the conditions of springtime, with the food that Nature then supplies. Much, very much, depends upon the food, the "balanced" ration. We must balance it for fertility Let us interrogate Nature! Where are the grains in the spring? They are gone, they have fallen onto or into the ground and are sprouting and growing and there is a plentiful supply of tender green, the insect life too, begins to pulsate, the grubs are pushing their way to the surface and worms (animal food as we call it) are abundant. Let us copy nature, feed more green food and animal food and less grain and we shall have greater fertility.

You all know my rules for egg production. I sometimes wonder if you do not get tired of my repeating them! The three essentials of egg production are comfort—exercise—proper food. These three are also essential to fertility. One of the many causes of infertility is lice. The body lice deposit their eggs chiefly on the feathers at the vent and when they are abundant prevent fertility. Lack of exercise is another and most serious cause of infertility. If the fowls are confined in breeding yards they must be provided with a good scratching pen filled with straw or hay from six to twelve inches deep, the hay must be kept deep, it requires more to be added at least once a week and should be cleaned out and renewed whenever it becomes dirty.

Exercise develops the egg producing organs and keeps them in a vigorous and reproductive condition in both sexes. Fertility demands vigor and vigor results from exercise. Lack of vigor on one side or the other is undoubtedly the chief cause of infertility, and this is usually the case on the side of the male bird. I will give some of my own experiences in this matter, some of them were sad.

* * *

I had read in poultry magazines (one frequently finds ridiculous statements in some of them) that when the eggs were not wanted for hatching the males should be removed from the pen, especially at moulting season, and allowed to rest, for constant use in the breeding pen was very exhausting let the male bird have several months of rest was orders of a number of books, I tried it. I took one of my best prize birds away from his harem put him alone, poor fellow! He fretted at the absence of all his beautiful wives, but in time became partially reconciled to the inevitable and after a few months I replaced him, re-mated him. He was a perfect picture of health and of beauty and I anticipated a good season of fertility for I had closely followed the poultry magazines directions but not a fertile egg was to be found. I then mated him to two pullets only, with not much better results and to my grief I found that if the male birds have been mated and are taken entirely away from the hens the organs of reproduction become from disuse so useless that it takes several months to restore their activity, and in the case of two year old (or older) mates they frequently become so atrophied that they never recover. What does Nature teach us? Dr. Salmon in his valuable books on the diseases of poultry informs us that with wild fowls the organs of re-



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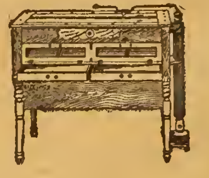

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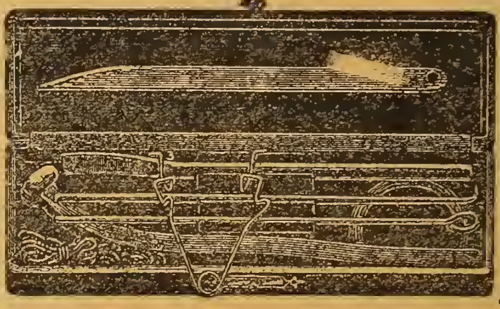
Breeders of S. C. White Leghorns Exclusively

Fine Feathers alone do not make the profitable hen. Our fowls have the reputation of being ***extra large, handsome*** and ***extra heavy layers.*** Last season, our eggs averaged over 95 per cent. fertile. ***Remember***—In getting eggs from us, you do not get them from the general runs. We have but one grade of eggs to sell for hatching and those are from our breeding pen composed of only the choicest fowls, selected from hundreds that are ***bred to lay.*** Hens that approach the ***200 egg record.***

Price of Eggs—$1.50 per 15, $5 per 100. ***Send for Illustrated Catalogue. Address,***

LEO. W. MARDEN, Manager



Caponizing Set

Double Your Profits by Caponizing.

Complete with Instructions, $2.50, Postpaid

STOCKMEN'S SUPPLY CO.
FRESNO, CALIFORNIA

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK

BUYS THE WORLD'S FAMOUS
EGG FOOD NO. 4

MIDLAND

IF YOU WANT EGGS
YOU WILL FEED NO OTHER

Used by all the largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the GOLD MEDAL at the St. Louis World's Fair for greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1604.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A FILCHER, Commissioner.

And Now Comes New Reward for Merit:

Read the following telegram received from the Lewis & Clark Exposition at Portland:

"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

PETALUMA INCUBATOR CO.

Main Office and Factory, Petaluma, Cal., Box F. Los Angeles, 505 South Main Street
San Francisco Office and Salesroom, 33 Market St.

WHY HENS DON'T LAY

When well cared for and well fed, is because they need waking up to start egg production. This comes naturally in the spring—the natural mating season. In winter you have to give something to stimulate them. Without this they are stupid, lazy and dull.

Mix **SECURITY POULTRY FOOD** in their rations. It will give them life and activity and shortly your hens will be laying. Don't wonder why they don't lay, but get Security Poultry Food from our dealer in your town and feed it.

WE WILL REFUND YOUR MONEY
if you are not entirely satisfied.

SECURITY STOCK FOOD CO.,
Minneapolis, Minn.

White Plymouth Rock Poultry Ranch

Eggs for hatching from First-Class Stock, $6.00 per 100, $1.50 per setting 15 eggs.
J.T. DAVIS, Prop. POMONA, CAL.

BUFF ORPINGTONS

Eggs from strong constitutioned, producing birds. $1.25 per setting, 2 settings, $2.00.
Robert Westcott, R. F. D. 115, Gardena, Cal.

Brown and White Leghorns

Prize winners at L. A. Show, '06. Eggs from good laying strains. Eggs, special matings, per 15, $2.00. Incubator lots, $6.00 per 100.
Hemet Poultry Yards, Hemet, Cal.

Blue Andalusian Eggs

$1.50 and $2.00 for 15, $7.00 per 100. Free range. I raised and sold cockerel winning first prize at late L. A. poultry show. Stock. ***Mrs. J. S. Duff, 3145 S. Hoover St., Los Angeles, Cal.***

100 Brown Leghorn Hens For Sale

Not fancy, but strong thoroughbred stock between 1 and 2 years old, $9.00 per doz. Must have room at once. Satisfaction guaranteed. Write today. **R. P. Brubaker, Shandon, S. L. O. Co., Cal.**

Choice Alfalfa or Chicken Ranch

Twenty acres good sandy loam soil, no alkali, abundance of water, 5-room house, large barn and incubator cellar. Near Anaheim.
WM. A. GREEN, BOX 401, ANAHEIM, CAL.

EGGS FOR HATCHING

from a heavy-laying strain of
SINGLE COMB WHITE LEGHORNS
I guarantee 100% fertile. Write for prices.
Golden State Poultry Yards, Lordsburg, Cal.
T. E. Mills, Prop. Home Phone 1720

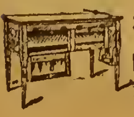
FOR SIX YEARS

Albers' Black Minorcas

Have led in the shows **every year**, and they lead all breeds in egg production all the time. Eggs in large or small lots. Stock for sale. Circular free.

GEO. R. ALBERS
4849 MARMION WAY LOS ANGELES, CAL.

White Leghorn Eggs for hatching, in incubator lots only, at Ten Cents a dozen over Los Angeles market quotations. **Avenue Poultry Yards, Ventura, Cal.**



30 DAYS TRIAL
Buy From Our Factory—Save One-Third.
PRACTICAL INCUBATORS positively the best. Hatches more and stronger chicks. 10 YEARS' GUARANTEE
Cat. free. PRACTICAL INC. CO., 720 S. 11th St, San Jose, Cal.

production "become very small in the winter with a comparatively insignificant blood supply, but in spring, as the breeding season comes on, they enlarge to five or ten times the weight are distended with blood and the height of functional activity is reached." With the wild birds the spring is the time of mating and we must try to supply the conditions of spring time in order to have fertile eggs.

When I wish to remove the male bird from a pen I always allow him two hens to share his seclusion, it keeps him happy and contented and whilst giving him a partial rest will not result in sterility or an atrophied condition. On the female side undoubtedly infertility in the eggs often comes from a too fat condition, the hen has been not fed too much, but a too fattening ration, not enough protein and green food; too much grain.

* * *

Some breeds fatten more quickly than others, especially the breeds that make good table fowl, these require more exercise than their more active and lighter cousins of the Mediterranean class. You can read in poultry magazines that infertility comes from our hens laying a much larger number of eggs than Nature intended, this is one of the ridiculous assertions to be found in print which are absolutely incorrect.

I had one hen that laid 225 eggs in exactly nine months. I kept her till she was nearly seven years old, every egg she laid was fertile. I had another hen I kept for three years, a beautiful hen, she never laid a fertile egg, although I changed her mate several times.

With one exception my highest scoring hens were my best layers, and the eggs of my best layers were the most fertile. Another cause for infertility and also of weak chicks from the same is the males are some of them so gallant that they call up their wives to eat and these take the best of the food (usually the most of the protein) and without one realizing it the male bird becomes thin and weak therefore I always feed the males during breeding times extra. I will shortly give an article on mating and breeding which will include this matter.

FEEDING FOR WINTER EGGS.

If those who keep fowls for winter eggs will provide comfortable, clean houses and feed their fowls on the kind of food that will furnish the component parts of the eggs the egg production will go on, and as fast as the yolk is formed it will separate itself from the ovary and pass into the oviduct to be covered with the white and the shell. This process depends entirely upon the formation of the yolk; until this is formed no egg can be furnished by the hen. As soon as the yolk passes into the oviduct the process of completion begins. This can be finished in from five to six hours, or it may take from twelve to twenty, according to the activity of the hen and the presence or absence of the proper material to do the work.

The number of eggs thus laid depends on the number of yolks the ovary will furnish. There are hundreds of these small, incomplete ova which will be complete as fast as nature can do the work with the material at hand. When deprived of that manner of food necessary for the growth of the yolk the work must stop.

Another fact for consideration is that the yolk or ovum becomes fertilized very soon after it leaves the ovary or just as soon as it enters the oviduct. As soon as the process of covering the yolk begins, contact of of fertilization is impossible. When the process of making the egg goes quickly on, as is necessary with the larger egg yield, there is but little time for the yolk to be fertilized, as it passes so quickly from its encasement in the ovary into the oviduct, where the process of finishing is done. For these reasons the chances are better for a larger per cent hatch from the hen that lays the fewer eggs.

To aid the poor fertility side of the question, we have the more sluggish condition that is natural to all fowls and birds following the season of moult and migration. Fowls of all kinds lose strength, courage and vigor during moult or the fall season. This same influence counts against the fertility of the winter egg yield.—Dairy and Produce Review.

White Plymouth Rock

Eggs from standard stock, $1.25 per setting, $6 per hundred. **Mrs. N. C. Hansen, Coachella, Riverside County, Cal.**

Fruit and Poultry Ranch For Sale

10-acre fruit and poultry ranch, fenced; 14 correls, including alfalfa, 400 deciduous fruit trees; wood for fuel; 6 room house, barn and windmill; close to railroad town. Bargain, easy terms.
J. C. Peters, Owner, Hemet, Cal.

Fairview Poultry Yards
W. Plymouth Rocks—S. L. Wyandottes

At the recent Los Angeles show our Wyandottes won as follows: 1st cockerel, 1st, 2nd and 3rd pullet, 4th cock. But 5 entries made. No Rocks shown. Special mating of White Rocks, pen headed by Fairview Prince, a son of the best laying hen in our yards. Eggs, either variety, $1.50 per 15, Eggs from utility pens, $1 per 15. ***A. E. Nelson, El Monte, Cal.***

W. Plymouth Rocks S. C. Wh. Leghorns
Large Egg Strain

Eggs, $1.50 and $2.50 per 15, $8.00 per 100, fertility guaranteed.

Agent for Jubilee Incubators and Brooders

One old Tom and one young Tom M. B. Turkeys at $10 each. That's all.

H. M. Stiles, R. F. D. No. 1, San Diego, Cal.

Eggs Wanted for Hatching

Our big adobe incubator brings the best results. Send us your eggs and we will return the chickens. Young Chickens and Turkeys Wanted.

Bamboo Poultry Ranch - Glendale, Cal.
AIKEN & CO., PROPRIETORS

Buff and Black Orpingtons
Silver Penciled and Columbian Wyandottes

Eggs for Hatching. Stock for sale.
Mrs. C. J. Jacobs, Box 356, Monrovia, Cal.
Mountain View Poultry Yards
Home Phone 148

Buff and Black Orpingtons
Buff and Brown Leghorns
Indian Runner Ducks—Bronze Turkeys
Eggs and Young Stock in Season
W. W. Bliss - Duarte, Cal.

Blue Andalusians

At Los Angeles, 1906, our strain in a class of 68 Andalusians with 16 birds won more firsts than all our competitors combined. Eggs, $2.50 and $3.00 per 14.
Blue Ridge Poultry Yards, 128 Avenue 32, Los Angeles

WHITE LEGHORNS

Eggs from pure white, trap nested, high-grade birds. Just a few cockerels for sale.
MRS. D. F. STONER, ONTARIO, CAL.

Rhode Island Reds

Fine stock of cockerels and hens for sale. Eggs, $1.50 per setting.
C. E. DAVIS, REDLANDS, CAL.

Rhode Island Reds

Record making layers; average per hen, whole flock, 180 eggs for '05. $1.25 per setting, 2 settings, $2.00; incubator lots, $6.00 per 100.
J. S. ENGLISH, R.F.D. 112, Gardena, Cal.

BRONZE TURKEYS

Hart's strain. Winners of five firsts at Los Angeles Show, '06, and always winners wherever exhibited. Write for prices.
ED. HART, CLEMENTS, CAL.

Buff Orpington and Barred Plymouth Rocks

Pure Bred Stock. Eggs, $1.25 to $2 per 14. Satisfoction guaranteed. ***Mrs. Albert Miller,*** 1913 Ricardo St., [near Eastlake Park] Los Angeles. Tel. East 1767.

SINGLE COMB WHITE LEGHORNS
Thorough-bred Stock. Eggs, $1.50 per 15
INDIAN RUNNER DUCKS
Eggs, 1.50 per 12.
Send for illustrated catalogue
John P. Boden, 638 Second Street, Watsonville, Cal.

Seven Straight Firsts
3 at Los Angeles, 4 at San Diego
Won by Hannah's White Leghorns

Eggs for Hatching: Utility—$1 per setting, $5 per 100; large birds, heavy layers, Exhibition—$2 per setting, $10 per 100; layers and winners combined.
M. I. Hannahs, Sunnyside, Cal.

WILLARD POULTRY FARM, HYNES, CAL.
Mrs. F. T. Hungerford, Manager
INDIAN RUNNER DUCKS

At San Francisco show, 1905, I won 2nd and 3rd on young drake and 1st on young duck, with 3 entries. At the 1906 Los Angeles show, 1st on old drake, 1st and 2nd on young drake, 1st and 2nd on young and old duck and 1st on pen. Eggs—$1 for 13, $3 for 50, $5 for 100. Hens' eggs all ordered up to April 1st.

Oxford Poultry Farm
Pure-Bred S. C. White Leghorns

One of the Largest, Yarded, Exclusive White Leghorn Poultry Farms on the Coast

Can furnish eggs for hatching from two grades as follows:

The First-Grade Pens are formed from birds in their second season, only the choice specimens being selected. These are the prolific layers with good carriage and color and strong points throughout.

Price per setting of 15 eggs, $2.00; 100 eggs, $7.00.

The Second-Grade Pens are formed from birds in their second season, containing only the ones that are strong in both shape and color. Exceedingly good layers for the grade. Equal to many first grade birds.

Price per setting of 15 eggs, $1.50; 100 eggs, $5.00.

Choice Breeding Hens For Sale. Address
H. R. LANE, HANFORD, CAL.

Poultry and Eggs Wanted

This sign you will see hanging outside of a merchant's store in nearly every town on the coast and it, in a measure, must convince you that there is money in the poultry business, and the

Chatham Incubators

will assist you in making money. Any responsible person can get a genuine **Chatham** and have SIX MONTHS TO PAY FOR IT—what is the use of you paying out money for an Incubator when you can make it pay over and over again for itself?

I can give you hundreds of testimonials from customers all over the Coast who purchased Chatham Incubators and Brooders last season on our **ON TIME PLAN**, and are thoroughly satisfied with them. The manufacturers fully guarantee every machine. Write me for our catalogue and some useful hints on poultry raising—it will be mailed to you free.

Geo. W. Foott, Box 2040, Portland, Ore.

THE ENGLISH RUNT.

It may seem strange to the general public to learn that the largest pigeon in the world is called the Runt, but nevertheless the English Runt is the giant of the lofts. To the superficial observer it appears to be only a large pigeon of ordinary dove shaped stamp, but it has as now bred and shown many features quite as distinct as that of size. Size, not weight is its chief point. The Runt should not measure less than 20 inches from tip of beak to tip of tail, while a first class show bird should measure 22 inches.

The Pigeon Standard says: "The Runt should not measure less than 20 inches from tip of beak to end of tail, a long narrow bird is most objectionable. Width and compass of girth must be accompanying points; a Runt 20 inches long should measure in girth around the upper part of the body, at least 14 inches. Wings, when stretched out to their full limit should measure from tip to tip not less than 36 inches. Head of a very massive dove-shaped character, with a thick beak of proportionate length rather downward in tendency. Wattle almond-shaped and though full, not rough in texture. Eye fine and plum-colored, showing a healthy whitish bloom, somewhat sunk in the head, the iris should be either silver or golden red; neck medium length, well cut away at the throat, no display of anything tending to a gullet wide, but not too prominent; chest is a great feature of excellence; Back broad rather "hog" shaped at the upper part but very at as it approaches the rump. Legs rather short than long in proportion to the size of the bird and widely set apart. Carriage upright, not horizontal or boaty. Colors, black, red, mealie, chequer, blue and silver. The Runt is not a very rapid breeder, rarely ever getting over four pair of young in a season and is therefore not of great value as squab-breeders for the market if bred pure, but when bred with the Maltese hen pigeon and cross taken, and bred together, few birds can excel them for the production of numbers and none can compare with them for size. In crossing the Runt with the Maltese hen I would advise the use of the Runt cock and the hen if large numbers of the crosses are desired, on account of the laying quality of the hen pigeon. On the other hand according to the hen having a great bearing on the size of the young if speed is not cared for the opposite cross will probably give a trifle larger squab, recrossing the opposite crosses for general loft breeding for market gets a good even sized squab near fifteen pounds per dozen at four weeks old.—W. E. Foster.

REARING INCUBATOR CHICKS BY BROODY HENS.

A hen to which incubator chicks are to be given should be free from lice and in a nest where other hens can not disturb her. In the evening two or three chicks, at least thirty-six hours old, may be placed under her from behind, care being taken not to excite her, lest she step on them. At least one chick of each color should be given her, for hens are apt to kill chickens of another breed, color, or size than those they have already adopted. The following morning she may be expected to mother as many as are given her.

"The first week is the most critical period in the life of the chick. Trouble is the most likely to be caused by chills." Coops should be used which do not permit the chickens during this period to get away from the mother. Later they should be removed to a slat coop which allows them free range. It is not advisable, however, to allow the hen free range for at least two weeks. If she is kept confined and fed coarse grains, while the chicks are being fed a few yards away on finer grains, she will soon forget to call them and probably they will not return to the hen, but wander away and be lost, or chilled to say the least.—Neb. Station Report, 1905.

BROODING HENS.

Almost any broody hen can be made to sit if carefully handled. She should not be carried by the legs with her head hanging down, but with her breast resting in the palm of the hand. Transfer should be made at night, and the nest into which she is put kept dark for twenty-four or thirty-six hours. The hen should be kept free from lice.

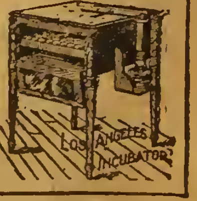
Standard Bred S. C. White Leghorns

EXTRA LARGE BIRDS AND HEAVY LAYERS. Eggs, $2 per 15; $8 per 100; $60 per 1000 from January until July only.

CAPTAIN MITCHELL SANTA BARBARA, CAL.

Author of "A Pracilcal Poullry Plant for Soulhern California," $1.25 cloth binding, on sale by Calif. Cultivator

Dean's Pacific is an Incubator built on scientific plans and has all the latest improvements. Every machine guaranteed. "Facts From Experience" and Catalog for the asking. Address ***Dean's Place, 2509 Central Avenue, Los Angeles.***



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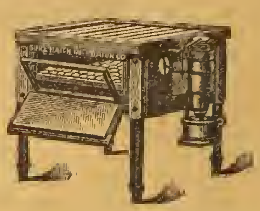
SEND FOR CATALOGUE

IS ATTAINED WITH

LOS ANGELES INCUBATORS

LEE'S LICE KILLER EGG MAKER | LARGEST POULTRY SUPPLY HOUSE IN THE U. S.

HENRY ALBERS 315 S. MAIN ST. LOS AGNELES



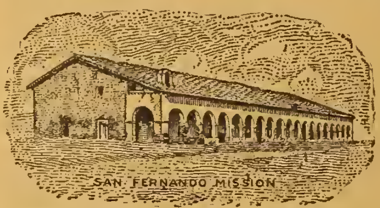
Sure Hatch Incubators

AND BROODER

Are recommended by the U. S. Dept. of Agriculture and Dr. Richard H. Wood, America's foremost authority on poultry breeding, after trying 12 different machines, states that the Sure Hatch is one of three only that gave satisfaction. He adds:

"Your Machine Hatched the Surest of the Lot. It was easy to adjust and easy to regulate. Your lamp is good, reservoir simple and compact and All in Sight." Freight prepaid and catalogue free.

Anna P. Williams, Agt., 824 S. Spring St., Los Angeles



Mission View Poultry Ranch

Winnings at Los Angeles Show, 1905

WHITE WYANDOTTES: PEN—First; COCKEREL—Second; PULLET—THIRD. First on OLD TOM MAMMOTH BRONZE TURKEY.

Winnings at the Poultry Breeders' Society of Southern California, 1906

WHITE WYANDOTTES: PEN—First, Fourth, Fifth; COCK—Second, Fifth; HEN—First, Second, Third, Fifth; COCKEREL—First, Third; PULLET—First, Fourth, Fifth. ¾ WILD MAMMOTH BRONZE TURKEYS: OLD TOM—First; YEARLING TOM—Second; HEN—Second, Third, Fourth, Fifth. BUFF COCHIN BANTAMS: COCK—First; HEN—First; COCKEREL—Second. GOLDEN LACED WYANDOTTES: PEN—First. LAKENVELDER and ENGLISH SALMON FAVEROLLE: All awards. RING NECK CHINA PHEASANTS: PAIR—First.

All perfectly clear eggs replaced if tested at 6 days and returned within 8 days of receipt of shipment, express prepaid. The Original Mammoth Adobe Incubator is now set with 1529 White Wyandotte eggs.

Mrs. C. D. Hubbard, San Fernando, Cal.

Winner New York, 1904, score 97½. Used as a model in the American Standard of Perfection.

Farm at Clearwater on Santa Ana Electric Line

W. W. HOWARD'S

S.C. WHITE LEGHORNS

Best Strain, Best Birds.
Greatest Layers. Largest Eggs.

WIN THE BLUE AT THE ST. LOUIS WORLD'S FAIR.

FIRST PRIZE HENS, St. Louis World's Fair; also at Madison Square Garden, New York's Great Show, 1905.

All specials and medals—best hen, best head, pure color.

FIRST PRIZE COCK At Madison Square, New York, 1905, and beating St. Louis World's Fair and Boston winners.

FIRST PRIZE PULLET at Madison Square Garden, New York, 1905, as well as one of the best cockerels in the U. S.; were sired by our famous Rob Roy Jr.

Our patrons report grand success with pullets from our stock; 26 eggs per month, 56 eggs in 64 days, 18 eggs in 19 days; eggs that weigh 2½ to 3 ounces.

229 eggs already this season.

Improve your flock with one of our large, beautiful White Cockerels.

Birds and eggs for setting. Price list mailed on application.

THE W. W. HOWARD CO.

(State Vice-President National S. C. White Leghorn Club)

2329 Hermosa St. Phone West 3999 ***LOS ANGELES*** Home 24902

Chamberlain's Perfect Chick Feed

"Nothing Just as Good"

"Nothing Just as Good"

World's Chick Feed of To-Day. The only original **Dry Chick Feed.** All others are worthless imitations. **Chamberlain's Perfect Chick Feed** was used exclusively at the great St. Louis World's Fair during the 7 months. This the highest compliment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.

CHAMBERLAIN'S PERFECT MASH EGG FEED, THE WORLD'S GREATEST EGG PRODUCER.

GERMAIN SEED CO.,

Pacific Coast Agents. **LOS ANGELES, CALA.**

SPECIAL PRICES ON TON LOTS.

Distributing Agents: FREDERICK BROWN, San Jose; CHAS. H. NEARPASS, San Diego; CHANNEL COMMERCIAL CO., Santa Barbara and Ventura.

RHODE ISLAND REDS
Fine large stock, heavy layers, best of broilers. Eggs, $1.50 per setting.
J. D. Setzer, Northrup and Pedro Sts., San Jose, Cal.

BARRED ROCKS, WHITE MINORCAS, INDIAN RUNNER DUCKS AND WHITE HOLLAND TURKEYS
Prize winning birds at Central California Fair, where 7 firsts were won in '05.
JOE McDONALD, R. F. D. 2, HANFORD, CAL.

WHITE AND BUFF Leghorns
Old and young stock for sale. Eggs after January 1. Write for prices.
J. F. Sarmento, R.F.D. Box 4, San Leandro, Cal.

LINDGREN BROS. KINGSBURG, CAL. McPHERSON, KANSAS
BUFF LEGHORNS BARRED ROCKS
Prize-winners at Chicago, St. Louis, San Francisco and majority of prizes at Portland on Buffs. Choice Cockerels and Pullets for sale.

White Plymouth Rock Cockerels
6 extra fine birds, only $3.00 each if taken now
R. S. Cox, San Marcos, Cal.

White Rocks Exclusively
Limited number of young birds. Eggs from prize winning, producing strain, $2 per 15 or $5 for special mating. Write for circular.
Mrs. Rhoda E. Durfee, 1110 W. 1st St., Santa Ana, Cal.

Buff Orpingtons and Barred Rocks
Standard Bred Eggs, $2 per 14. 3 sets, $5. Low prices on breeding stock.
B. M. Stana,
R. F. D. 8 Fresno, Cal.

SONOMA-AMERICAN INCUBATOR
Send for large circular fully describing these machines.
Sonoma-American Incubator Co., - Petaluma, Cal.

SQUAB BREEDING
and Fancy Pigeons. Largest stock on the Pacific Coast. Homers in 500 pair lots. Twenty (20) varieties of Fancy Pigeons. Safe shipments any distance.
THE OLIVE PIGEON LOFTS
P. O. Box 1177, Los Angeles, Cal.

$12.80 For 200 Egg INCUBATOR
Perfect in construction and action. Hatches every fertile egg. Write for catalog to-day.
GEO. H. STAHL, Quincy, Ill.

WHITE LEGHORN CHICKS, 10 Cts.
WHITE PLY. ROCK CHICKS, 12½c.
Both from good stock and in good healthy condition. The W. P. Rock males where I got my eggs are from prize winning stock. Leghorns are selected and have good markings. This is a fine time to start young chicks, after the rain; yards purified, green growth coming and mites and lice at a disadvantage.
Wm. A. Green, Box 401, Anaheim, Cal.

BARRED ROCKS
EXCLUSIVELY
Send for 16-page 1905 Catalogue
H. R. CAMPBELL
Box O PETALUMA, CAL.

Mountain View Poultry Ranch
S. C. White Leghorns—Heavy layers. Eggs, $1.50 per 15, $5.00 per 100.
Indian Runner Ducks—Males for sale. Eggs, $1.00 per 13, $3.00 per 50, $5.00 per 100.
Mrs. J. L. Updyke - Fullerton, Cal.
Successor to Jacob Kreger

Rose Comb White Leghorns
High Grade Buff Orpingtons
Varian's Poultry Yards
P. O. Box 666. Home Telephone 1886
895 N. Catalina Ave., PASADENA, CAL.

White and Silver-Laced Wyandottes
White Plymouth Rocks
White Leghorns and Black Minorcas
Plymouth Rock and Wyandotte eggs, $2.00 per setting, $8.00 per hundred.
Leghorn and Minorca eggs, $1.50 per setting, $6.00 per 100.
I have been breeding thoroughbred poultry for over 20 years and have as fine stock of these varieties as there is on the Pacific Coast.
I also hatch and can supply little chicks from a dozen to a thousand from the above varieties delivered anywhere within 72 hours of San Jose. Prices on application.
J. S. Smith, Box 526, San Jose, Cal.
YARDS—CORNER MOORE AND CHAPMAN STS.

GUINEA FOWL FOR THE TABLE

From "a time wherein the memory of man runneth into the contrary," on every well-regulated, well-kept farm in this county says the Denver News, there could be found a pair or more of modest guinea fowls. During this period had the farmers been asked why this feathered biped was fed and cared for they would have been at a loss for an answer. The guinea fowl is beautiful in neither form nor plumage. Its eggs are small, speckled and of a dirty yellow color. Yet, after all these years, during which a kindly fate, with the aid of the farmer, has succeeded in perpetuating the species, the guinea fowl, through the aid of the United States Department of Agriculture bids fair to come into its own.

On the ears of the American people obliged to pay 25 cents a pound for their turkeys, the intelligence concerning the guinea fowl sent out by the Agricultural Department will fall as glad tidings. For, says the department the guinea fowl is a most excellent table bird. "The birds do well with comparatively little care," the report says. "In spite of the half-wild habits which they retain when allowed to range, they may be trained to more domestic ways and readily fed and fattened like other poultry. They are exceptionally hardy. Their noisy and quarrelsome habits are commonly thought to give warning of hawks or other intruders in the poultry yard. Guineas eat such large numbers of insects that they are often useful in helping to destroy these pests. They also eat many wild seeds, and in this way are of value. There is already a fair demand for guinea fowl, especially in New York and other cities in the Eastern United States. Very young birds for broilers bring good prices early in the season in city markets, while the older ones are easily sold throughout the autumn and winter. They may be prepared for the table like ordinary fowl or like game birds, and have very much the same food value as chicken and are as economical when bought at about the same price per pound. At moderate prices they furnish the body with about as much nourishment for a given sum as medium cuts of beef and mutton, and at higher prices correspond in value with the more expensive cuts, and such poultry as turkey, green goose, etc."

Now that the bird has received the commendation of the Department of Agriculture as an article of diet, it may be expected to increase both in numbers and in price, if not in value.

A TYPICAL FOWL.

The Blue Andalusians are fast coming to the front as one of the most beautiful of our feathered tribe and the greatest egg producers. The egg being large and of an exquisitely delicate flavor, weighing from two to three ounces to the dozen more than the Leghorn or Minorca.

Coming from a warm climate this breed is not adapted to localities where the winters are long and severe but seem to thrive well on the Pacific Coast. They do not need much range and can be kept in close confinement better than any other breed. The Andalusian must be considered a truly useful and handsome fowl and appears each year to increase the number of its admirers.

They make a good table fowl and the young chicks feather fast and are hardy. Eastern fanciers are looking to California for fancy stock especially in the Mediterranean class, several large shipments having been made to Eastern cities in the last few months, Blue Andalusians, Black Minorcas and Brown Leghorns being in the lead.

The farmers should certainly be interested in this breed of fowl as the perfect marking can always command fancy prices while the off-color hens being as equally good layers would supply the market demand. They mature early being known to lay at four months, non-sitters, a good all-round chicken and a typical American bird having our three National Colors. The red comb, eyes and wattles, white earlobes and blue plumage.
—Mrs. T. R. Griffith.

EGG FOOD A·C·W IT FILLS THE BILL

Stop and Think

If you would have an **Egg Food** that runs **100 lbs.** per sack or one that runs less:—you would say naturally that 100 lbs. of material in the sack must be better goods than 80 or 90 lbs. per sack; because in order to get 100 lbs. in the sack we screen all the **Chaff, Waste** or bulky material from the goods, and you get a heavy food—you use less and your hens do better—not feeding them bulky, indigestible ground straw or trash that should not be there in the first place.
Compare our A. C. W. foods with others yourself—note the difference—then ask your hens their opinion by feeding them A. C. W. food and get their answer—**more eggs.**

Agricultural Chemical Works
Phones: Boyle 3, Home 6063 901-907 Macy St., Los Angeles
"Hen Hints" or "Egg Calender" free for the asking. Manufacturers of Blood, Bone, Charcoal, Grit, etc., for Poultry.

Free!

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The Jubilee Incubators and Brooders are guaranteed to give **Business Results**
Described in our New Illustrated Catalogue
—— **80 Big Pages** ——
A Complete Line of Poultrymen's Supplies sold in the JUBILEE WAY—THE MAIL ORDER WAY—Quality guaranteed—Satisfaction, or Money Back—Money-making qualities—Money saving prices
——**FREE**—— You Need ——**FREE**——
THE JUBILEE BOOK
Send for it Today—NOW A Postal Card will do
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OFFICE OF
Must Hatch Incubator Co.
(INCORPORATED)
A. E. Bourke, Pres. Phone Black 1211

PETALUMA, CAL., JAN. 1, 1906.
TO WHOM IT MAY CONCERN;

As the chicken raising season is at hand, we beg leave to call your attention to a few of our specialties.
Do you need an Incubator? Our machines are fully guaranteed and have proven themselves unsurpassed wherever used.
Do you need Brooders? We manufacture just what you want; fully guaranteed, made of the finest material and of the best possible workmanship, and, above all, a practical machine which saves the purchaser money, time and labor.
Do you need Poultry Supplies of any kind? We manufacture a line of Supplies the use of which makes Poultry Raising not only profitable, but a pleasure. Among our specialties are:
Our Water Fountains; our Self Feeder for Chicks, our Feed Troughs, large and small; our Lamp Fillers.
Our convenient Must Hatch Nest Boxes; our safe and sure Must Hatch Insecticide, our sanitary Must Hatch Disinfectant, our sure death Must Hatch Lice Exterminator, our Poultry Compound, a fine Spring and Fall Tonic.
In connection with the above list, all of our own manufacture, we can also furnish the following, which are indispensable to the Poultrymen:
The No. 128 Clover Cutter, the Enterprise Bone Mill, the Ohio Feed Cutter, the Banner Root Cutter, the Enterprise Feed Chopper, the Ideal Duplex Feed Mill, and the Farmer's Boiler.
Do you wish to make your own Incubator or Brooder? We can furnish you all the necessary parts for making an Incubator or Brooder, also plans for the best and most practical Poultry Houses.
Did you ever purchase Just Hatched Chicks? We have a Hatchery of 50,000 chicks per month capacity in operation the year round and have, for the past few years, been successfully shipping, in our specially constructed carriers, just hatched Chicks, to distances as great as 2,000 miles. If you need them, book your order early, as our future delivery list is rapidly filling up.
We can also supply White Leghorn hatching egg in quantities desired. If you have not already received our catalogue, write for Catalogue B, and you will find therein a more detailed description with prices, etc., of the above.
Hoping to hear from you in the near future, we are,
Yours Very Respectfully,
MUST HATCH INCUBATOR CO.

WESTERN GAS ENGINE CO. INSTALLS SUCCESSFUL PUMPING PLANT AT ANAHEIM.

The Anaheim Union Water Company have reason to congratulate themselves on the splendid results obtained from the installation of their new pumping engine built by the Western Gas Engine Company of Los Angeles. Some months ago, when it was decided to increase the water supply, the Directors made an exhaustive study of the matter, visiting a number of the most important pumping stations in Southern California, in order to thoroughly determine the relative advantages of both gasoline and electric power, and after careful inspection, together with competent power experts, the conclusion was reached that gasoline would furnish altogether the cheapest and most desirable power for the proposed plant.

Bids were called for specifying a modern gasoline engine of 60-horse power. Among the six bids received was one from the Western Gas Engine Company, this bid was not the lowest, but after a comparison of the merits of the different makes, it was accepted, as the Western Engine was decidedly superior in numerous points.

The engine together with a Byron Jackson No. 10, Special Centrifugal Pump was installed early in August but owing to the fact that the pump had not been sunk low enough, the water furnished was somewhat short of the desired amount. The pump was accordingly lowered fifteen feet, and on November 6th a test was made. The results proved the wisdom of the choice of the water committee, for the plant averaged over 400 miners inches of water from the start, with a lift of forty feet. The run was made for ten hours, and continued each day for some little time to test the regularity of the flow and the smooth running qualities of the engine. In every particular results were most satisfactory, and not a fault has developed to detract from the exceptionally creditable showing made. A stream of water four feet across and nine inches deep is being pumped, and the water question is settled in a most gratifying way for some time to come. The engine uses No. 2 distillate for fuel, consuming five and a quarter gallons per hour at a total cost of twenty-nine cents, thus making this plant one of the most economically operated in the entire southern part of the State.

Engine During Installation

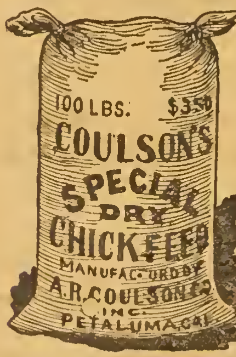
The Western Gas Engine Company has secured a number of other important contracts within the past few months, indicating that the superior merits of their engines are rapidly forcing them into first place in this line. Among these are nine engines for use at the plant of the New York Engineering Co., where the government's reclamation project, above Yuma, Arizona, is being carried out; a 50-horse power size at Fayette, Idaho, for use at the city water works; two 60-horse power size at the Huntington Beach Company's electric light and water plant; one 50-horse power at Monrovia's water plant and a number of others; all of which have excited the admiration of their owners and experts have proven their claim to superiority by the manner in which they have exceeded every claim made in advance.

\$500! What About It!

Look for a Little Envelope in the 100 lb. Sacks of

Coulson's Special Dry Chick Feed

For Little Chicks and Turkeys



You will have the best success you ever had in raising chickens if you will feed COULSON'S SPECIAL DRY CHICK FEED. Send for sample. Its good for turkeys as well.

This Chick Feed is composed of small pieces of cracked grains, also a variety of seeds and small pieces of charcoal, meat and bone. It therefore contains a variety of the best and most wholesome ingredients in the right proportions to promote the growth of chicks and turkeys and fully nourish them so they will reach maturity early, and be vigorous, strong, healthy birds.

ECONOMY IN USING COULSON'S SPECIAL CHICK FOOD.

By a series of tests it is found that chicks will gain weight much quicker on COULSON'S CHICK FOOD, AND at less cost than those fed on grain.

Chicks fed on COULSON'S CHICK FOOD will reach the weight of two pounds a month sooner than those fed on grains, and they will reach the average weight of three pounds eight weeks sooner.

With COULSON'S SPECIAL CHICK FOOD and COULSON'S GROWING CHICK FOOD many succeed in raising from 95 per cent to 98 per cent of the chicks hatched and you can do as well. TRY IT THIS YEAR.

Mr. Poultryman, there is only one way to buy, and that is, on record of what you want. If you want to raise lots of nice chicks, buy good feed.

I think your Chick Feed in fine. I never lost one while I fed it. and never saw chicks grow so fast in my life.
MRS. HATTIE DEAN.
Mesa, Washington.

COPIES OF LETTERS RECEIVED.

I like your Special Chick Food better than anything I have ever used.
MRS. GEO. THISSELL, Jr.,
Winters, Cal.

\$500. What about it?

I have used your Special Chick Food since last March, and am still using it. I believe it to be all right. I have lost less chicks than other years. It is good—the best I ever bought.
R. A. WHITFORD.

I have used your Special Dry Chick Food and recommend it to all my neighbors.
MRS. IDA L. PARKER,
Eureka, Cal.

Our chicks are doing splendidly on the Special Chick Food. No losses except by accident.
J. HUNTER.

COULSON'S FOODS GIVE BEST RESULTS.

I am a user of Coulson's Chick Food and have raised 1100 chicks this winter. The first hatch I used some other food and lost over sixty. My second I raised on COULSON'S CHICK FOOD. according to directions, and lost only ten. Then in my third hatch I fed COULSON'S CHICK FEED—dry—three times a day for three weeks and out of 394 chicks, I lost only two, and all are doing fine. Now, chicken raisers in this locality are wondering at my success, and I am praising COULSON'S FOOD as much as I know how. (Signed) F. E. HEUSEL,
Half-Moon Bay, Cal.

COULSON'S CHICK FOOD.

Contains ingredients that long experience in poultry raising has found best adapted to give nourishment to growing chicks. It is promptly digested; causes no indigestion: keeps bowels in normal condition. Chicks show increase in weight, strength and beauty when fed it exclusively. Little chicks need no other food for the first five or six weeks. Save your chicks and make good profits.

Keep them from bowel trouble and all ailments incident to the first five weeks. Profit lies in the chicks you raise to maturity—not in the number hatched. Give them a ration that makes healthy, well developed bodies

Remember Mr. Basset sold broilers only six weeks old for \$3.75 a dozen. They were fed on Coulson's Chick Food.

BEGINNING LIFE ON COULSON'S CHICK FOOD

TEN WEEKS OLD CHICKS RAISED ON COULSCN'S CHICK FOOD

\$500

It's Great Food to Make Chicks Grow

\$500

Send me another sack of Coulson's Chick Feed. It seems to be just the thing for young chicks, they are doing fine.—H. A. DUN, Tacoma, Wash.

COULSON POULTRY AND STOCK FOOD CO., PETALUMA, CAL.

Germain Seed Co., Southern Distributing Agents, 326-330 South Main Street, Los Angeles. Cal.

Queries and Replies

CORELESS APPLES AGAIN.

Is there any virtue in the seedless apple about which so much has been printed. Is it really worth purchasing for a city lot or home orchard.—J. E. K., Los Angeles.

The seedless and coreless apple propaganda continues to be cleverly manipulated and exploited before the people by the promoters of this money making scheme which has been denounced by scores of writers and horticultural authorities as an unmitigated fraud and fake. That there is a practical seedless apple is not denied. But, as a practical commercial fruit the seedless and coreless apple is nil. The fruit experts of the Department of Agriculture have denounced it as a fake, and the promoters can point to no single authority to uphold their claims, yet the promotion work goes merrily on; companies are formed, and literature distributed showing that this is the most wonderful horticultural discovery or evolution of age.

Many papers, and even scientific journals, have been "roped in" and have published articles especially written for them by propagandists themselves, and these papers are now being quoted in the printed literature distributed by the company. The agricultural journals of America have about stopped publishing accounts of this wonderful (?) discovery, but the daily press continues its free advertisements every now and then.

Seedless apples are quite common and have been so for many centuries; the Cultivator has received several lots from various localities in the past year. A seedless apple is of no more value than the most "seedy" one.

WORMS IN PIGS.

Editor Cultivator:—I have a bunch of pigs four months old that are wormy. They do not have much appetite, but droop around and are weak. What shall I do? J. C. G., Escondido.

Give each pig a spoonful of turpentine in milk morning and night for three days, then mix wood ashes or powdered charcoal in dry bran and feed for a week. Give milk as usual.

GRAIN FOR HOG FATTENING.

A subscriber asks what is the best grain to grow for fattening hogs. Proffessor Wickson answers a similar question by saying: "Experience seems to show that probably the best grains to grow for fattening hogs are barley and Egyptian corn, or Kaffir corn, both of which are varieties of sorghum, making a large starchy grain. There are only a few places in California where Indian corn grows well; consequently the other grains which we have mentioned are used as a substitute, and, in connection with alfalfa, make a splendid ration for hog feeding.

BERMUDA GRASS.

Editor Cultivator.—Although a pest, Bermuda grass is said to be a good pasture grass in some sections. Can you give us an article on the subject?—H. D. W,. Santee.

Along the Sacramento river and other parts of the State, where we have large bodies of overflow lands, much of which is under water for from three to six months, the farmers have found Bermuda grass to be an excellent pasture grass for these lands. It grows under water and can not be killed by overflow; it makes an excellent sod, and produces an enormous amount of feed, in fact in some sections it produces more feed as pasture for cattle and all kinds of livestock than any forage crop that grows in those parts, and every species of animal appears to be fond of it, especially cattle, horses and sheep, and even chickens. Bermuda grass will stand both drought and overflow and for pasture nothing, not even alfalfa, equals it as a forage grass for those sections. It grows very thick on the ground, a perfect mat, but does not grow tall, and probably would not make hay. It does not grow readily from the seed, which is very small and insignificant and hard to obtain, yet the seed stores of California carry it, but it costs $1 a pound generally. The easiest way to get a stand of it is to cut the sod in the spring, chop it up as fine as you can (every one-inch piece will grow) and cover well on plowed ground.

Bermuda grass does best on wet land, spreads rapidly, makes a heavy sod and is difficult to get rid of when once established, but any one having wet land once in Bermuda grass in the districts above noted do not want to get rid of it, as it is too valuable a forage grass to replace with anything for feed for stock. It is claimed by many that it produces more and better feed for dairy cows than any grass grown, and that milk produced from it tests higher than that made on any other grass. but it loves hot weather and plenty of water. Of course the foregoing relates to the grass under extremely local conditions and in stock-raising sections; in parts of the State largely planted to orchards or any permanent cultivated crop, it is a pest of the worst kind.

WOOLY APHIS.

"A Constant Reader," Santa Rosa, is informed that the remedy for the root form of wooly aphis appeared in the issue of Nov. 3rd, 1905; but as others interested may not have saved the "Cultivator," as carefully as "Constant Reader,“ we reprint the answer to the query.

"Your tree is infested with wooly aphis. It is easy to kill the form above ground, but you should look for the root form, which is by far the most destructive. Almost any spray will kill those in the tops—distillate is best. For root form: Dig down six inches and make a basin three or four feet around the tree, just before rains come. Distribute in this basin about three pounds of tobacco dust. The rains will carry this down and kill the aphis.“

The shield or plate bud of the walnut which you ask about is a section about an inch wide (around the branch) and about two and a half inches long(lengthwise of the branch) with the bud in the center. This piece is laid on the branch to be budded, marked, and the piece cut out so that your plate with the bud will fit in its place. It does not go under the bark at any point, but is merely a plate to replace that taken out and of precisely the same dimensions. To insure the bud plate to fit it was recommended in the article you mention, that a double bladed knife (made on the anvil, and with blades two and a half inches apart) be used to cut out the old plate as well as the one with the bud. With such an instrument the bud plate must fit.

POULTRY BULLETIN.

Editor Cultivator.—Will you please tell me through your very valuable paper how to address a letter to Berkeley in order to get the Bulletin on Poultry Food? F. E., Anaheim.

Director Agricultural Experimental Station, Berkeley, Cal.

CRAPES FOR SANDY SOIL.

Continued from page 124

than Missions that it is not worth while to grow them in competition with some other grapes in its season. Blue Portuguese is similar to Mission, it comes in with the earliest grapes and sells well in its season. It produces well on sandy soil. Chassalas Rose is a good seller and does well on such soil. It comes early and is of good quality and is attractive. Cinsaut is an excellent grape, supplants Malvoise perfectly as far as fruit is concerned, is better adapted to dry sandy soil than any other variety that we know of. The fruit never cracks as Malvoise does sometimes. The only objection to it is that it is too tender to ship long distances and the bunches are rather compact. For local markets it is very fine and sells readily. For a purple grape, it can't be excelled in looks and the quality is good. Golden Queen is perhaps our most prolific grape on sandy soil. It ripens in October and early November. Is of good quality and will ship well to local markets, bunches are similar to Muscats, but more perfect in form.

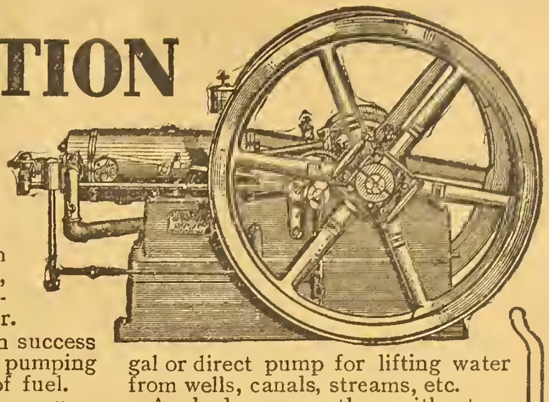
The finest shipping varieties require a heavy subsoil to produce the best quality. Tokay, Emperor and Cornichon bring the best returns for table grapes when well grown, but this cannot be done in a sandy wash. The varieties we have mentioned have produced well in sandy soil in the San Bernardino valley. Malaga has given fair results also.

We would not advise planting many varieties unless you expect to peddle the fruit. We have known Malagas to bring better average returns than oranges in an acknowledged orange location. We have known Eucalyptus trees to excel both in such locations as you describe. Of course your subsoil may be good enough to suit any sort of grapes.

Grapes can be grown without irrigation in some locations, but not in others. Good crops may be raised without it and the same vines may produce better crops with it—that is usually the case. If your sand and gravel is deep, say ten to fifteen feet, your vines will have to hustle without irrigation unless the water table is close.

Grape cuttings should be kept moist from the time they are cut till they are planted. Plant cuttings about a foot long, cut with a bud near the top. Plant the cuttings straight up and down with the top bud at the surface. There is no use in planting long cuttings at an angle. Don't punch holes and drop the cuttings in, but force the cutting into the soil so that the lower ends are firmly imbedded in the soil. If you expect to plant cuttings where the vines are to grow, make your cuttings at least 18 inches long and leave but one bud above ground. The best way to start a vineyard is to grow the cuttings in a nursery, select the best plants (if you have a spite against your neighbor, give him the poor ones or advise him to plant cuttings) cut the roots to a length of six inches and plant the vines clear to the top bud as it grew in the nursery.

We have never yet seen a perfect stand in a vineyard where cuttings were planted. It costs as much to care for an uneven stand and it cuts down the net profits, besides makes the vineyard look ragged and reduces its value as an income maker or a selling proposition.



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By
PUMPING

For all those who wish to irrigate by pumping, the I. H. C. gasoline engine is the one best power.

The difference between success and failure in an irrigation pumping plant is often a question of fuel.

The I. H. C. engines use gasoline—a cheap and easily transported fuel.

They take the least fuel and convert it into the most power.

They are unequalled when put against a steady load as in pumping, and sustain their full rated power with persistency and regularity.

They can be belted to any centrifugal or direct pump for lifting water from wells, canals, streams, etc.

Anybody can run them without expert knowledge or previous experience.

They can also be used as a general purpose engine for sawing wood, cream separating, feed grinding, etc.

They are made in several styles and sizes—

Horizontal and Portable—4, 6, 8, 10, 12 & 15 Horse Power.

Vertical—2, 3 & 5 Horse Power.

Call on local agent and examine these engines or write nearest general agency for illustrated catalog.

WESTERN GENERAL AGENCIES: Denver, Col., Helena, Mont., Portland, Ore., Spokane, Wash., Salt Lake City, Utah, San Francisco, Cal.

INTERNATIONAL HARVESTER COMPANY OF AMERICA, CHICAGO, ILL.
(INCORPORATED.)

BEST TREE WASH **GREENBANK** 98% Powdered Caustic Soda and Pure Potash.

Copy of Analysis of competitive brand labelled and sold as "Powdered 98% Caustic Soda: Sodium Hydrate, 75.60%; Sodium Oxid, 58.59%. Signed: I. M. Curtis & Son, Analytical Chemists.

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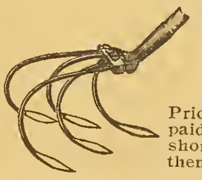


ADJUSTABLE GARDEN CULTIVATOR

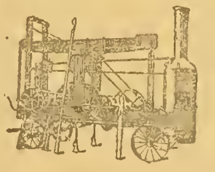
Price $1.50. Sent charges paid on receipt of price for short time only, to introduce them.

Ira D. Brown, Dist. Agt., San Fernando, Cal.

CEDRUS DEODARA TREES
FOR SALE

The undersigned will receive bids until March first, 1906, for two-year-old Cedrus deodara trees, in lots of one hundred or more. Minimum price, $50 00 per hundred, f. o. b. Pasadena, Cal.

T. P. LUKENS,
Acting Forest Supervisor,
544 Byrne Building, Los Angeles, Cal.



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Portable and drill any depth by steam or horse power. 42 Different Styles. We challenge competition Send for Free Illustrated Catalog No. 13.

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Sinaloa Farms $2 an Acre

Wealth producing valley lands, $2 to $20 an acre, in Sinaloa, Mexico. All the advantages of California, and land is 1000% cheaper; an era of development; great railroad activity; deep rivers; seaports. Best opportunities for small capital on the continent. Call or write for information.

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421 CHAMBER OF COMMERCE
LOS ANGELES, CAL.

Household Department

NOW.

If you have hard work to do,
Do it now.
Today the skies are clear and blue,
Tomorrow clouds may come in view,
Yesterday is not for you,
Do it now.

If you have a song to sing,
Sing it now.
Let the notes of gladness ring
Clear as song of bird in spring,
Let every day some music bring;
Sing it now.

If you have kind words to say,
Say them now.
Tomorrow may not come your way.
Do a kindness while you may,
Loved ones will not always stay;
Say them now.

If you have a smile to show.
Show it now.
Make hearts happy, roses grow,
Let the friends around you know
The love you have before they go.
Show it now.
—Chas. R. Skinner, in New York Sun.

Love and Loneliness

The sun had buried half its red disk below the border of the prairie, and the silence of the night was settling down over the expansive plain of grass. Partially sheltered by a few mesquite bushes, burned a small camp fire; and near it sat a young woman on the ground. with clasped hands, and with beautiful, sorrow-fixed eyes staring into the face of a dead man lying stretched upon a blanket with his feet toward the fire.

Still, motionless as the dead, sat the girl, while the darkness deepened round her, bring the outline of her form into bolder relief in the glare of the blaze. The trace of tears was on her cheeks, but her eyes were dry now, her features bearing a hard, strained expression, but one which could not quite dim the marvellous beauty of her face.

The sun sank lower and darkness came on, bringing the light of the camp fire into clearer distinctness. Alone, with the body of her dead father, miles from any human habitation, on the open prairie, with the night before her; the terrors, the awfulness of the situation had stunned the girl, and she could only sit on her feet and stare into the dead face before her.

Only a year before, how different all had been. But misfortune had been sure and swift, and broken in health, the father, seconded by the daughter's wishes to go far away from the old associations began that emigration to the West, which had ended here on the broad prairie. One of the wagon horses had died the day before, provisions were getting low in the locker and the end of all seemed very near to the girl. The thought came to her that if she could but lay her head upon the now cold, pulseless breast of her father and pass peacefully away, as peacefully as he had passed, all would be well, the end of things would have been fitting. But she felt the great strength of her young arms, the vigorous action of her heart—starvation would be slow. And in the meantime decay would come to the loved form before her, the blistering sun of the day-time would rapidly accomplish it.

The girl sat and thought of these things, while the night deepened round her. Everything was deathly silent, until the sharp yell of a prairie coyote cut the silence like a sharp-toothed blade. The girl shuddered. Another yelp came from out of the grass near by, and this was quickly followed by others.

The girl crouched lower toward the dead man and almost held her breath. She recalled the many stories she had read and heard repeated, of travelers being overtaken and attacked by packs of wolves, and in imagination she could already feel the sharp little fangs of the coyotes tearing her soft flesh.

But the fire still burned, a steady flame, the one point of reflection in a vast sea of darkness. How long would the suspense last came the thought to the girl. She dared not look around her, in the dread of encountering the hungry gleam of myriads of little eyes which she knew must be looking out of the near by darkness. For a moment her thoughts dwelt upon her own name, "Sylvine," given her because her mother had loved the woods and now Sylvine was associating her present situation with stories of the Russian and Northwestern forests.

She took the cold hand of her father in her own and stroked it gently. And she prayed, not to escape, but that the pain and torture of it might be short. And while she prayed, the sound of hoof strokes came to her ear, and she shuddered again in sympathy for the poor beast which had been hobbled and turned loose there to find his food.

But the shudder had scarcely passed, when the sharp report of a rifle, followed by the howl of a coyote, rang out quite near the camp. Then came a rapid fire of shots and by a good marksman, for they told effectively among the wild dogs of the wilderness in the glare of the lone protecting camp fire. And the sound of a voice also reached Sylvine's ear, a human voice, at the moment of her deepest despair.

"Hello," said the voice.

Sylvine arose and turned about.

"I take it ye're in trouble, Miss," continued the young man, dismounting and coming forward; "an' I thought if I could lend ye a hand." The eyes were frank and blue, and the face smooth and boyish, under the turned-up brim of the broad sombrero.

"I'm jest a herder, Miss," he went on, "but folks in trouble are always my folks, especially if they're in frocks. I saw the situation from a little way out and took the liberty of droppin' a few o' the aggravatin' coyotes, though they were only after the dead hoss, an' maybe, the—the—" The man glanced toward the corpse. "It's your father, is it Miss?" in a tone which bore the true ring of sympathy.

Sylvine nodded and, while tears began to fall from her eyes, she made a step toward her would-be protector.

"It was awful," she said, "being here alone and unable to die, too."

"To die, too? Well hardly, The Lord knows his business. There are flowers He can't quite afford to have cut down. They light up the blank spaces, you know, and make folks remember there's a heaven. I thought of that the moment I looked over the grass here and saw your face in the light of the camp fire, seein' how death had been at work around ye."

Sylvine had drawn a little nearer to the young man, with a feeling of unhesitating confidence.

"I know it was wrong to wish for death, but all was so terribly, awfully lonely. There seemed nothing left in life for me."

" Well, I don't know about that. I've been livin' lonely for some years myself, an' I guess I've enjoyed it fairly well, though there has always seemed to be something lackin', couldn't tell jest what—till—till a few minutes ago. But maybe I'm talkin' too much. My ranch is not far off. The boys call me 'Lonely Lem.' I've got a doby off here to myself, and ye're welcome to the whole inside of it, for as long as ye want to stay, an' I'll stand guard on the outside. An' when ye want to go, I'll take ye across country to the railroad, forty miles from my ranch."

Lem stooped, gently lifted the corpse from the ground and placed it in the wagon. Then, harnessing his own and the remaining team horse to the van, he assisted Sylvine to a place in front, and drove away, with only the starlight to guide.

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Will be in effect every day, Feb. 15 to April 7, and Sept. 15 to Oct. 31, 1906, from all points in the east and south.
Following are a few:

Chicago	$33.00	Kansas City & Leovenworth	$25.00
St. Louis	30.00	St. Joseph & Atchison	25.00
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Dallas, Houston and Fort Worth			25.00
Nearlo all points in Kansas, Oklahoma and Indian Territory			25.00

Colonist rates are also in effect from all points east of Chicago and south of the Ohio river.
Santa Fe Agents in California will take deposits of money to cover price of tickets, which will be promptly furnished to passengers at any point from which these rates are in effect.
California illustrated literature mailed free to any address or may be had from Santa Fe representatives.
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Colonist tickets are honored in tourist sleeping cars which run via the Santa Fe to Los Angeles and San Francisco.

Lonely Lem had found a new occupation in life. He was guarding a treasure in his doby that to him grew more precious each day that Sylvine remained under his protection. And he began to look forward with an accompanying heart-ache to the day when the girl's grief had grown old enough for her to care to leave the vicinity of her father's grave. Each day added strength to the one thing in Lem's mind that the one thing needed to piece out his life was a woman's love, and that woman. At this point in his thoughts, Lem would invariably shrug his shoulders in awe of the gap that seemed to lie between them.

At last the day came. Sylvine stood in the doorway looking out across the prairie toward the sunrise, while Lem sat at her feet.

"I feel," began Sylvine slowly, "that I have imposed upon your goodness as long as I should, and it is time for me to go away— away—somewhere. But heaven only knows where I shall go." The girl suddenly dropped her head upon her arm and burst into tears.

Lem sprang to his feet and hovered over Sylvine in the doorway.

"Is it as bad as that, little 'un?" he cried, close to her ear. "Because, if ye're lonely, I guess it won't offend ye if I tell ye about what's been burnin' inside o' me ever since I first saw your face in the light o' the camp fire, with the coyotes yelpin' around ye."

Sylvine was silent. But something caused her to lean toward Lem.

"I knew all the time, little 'un, somethin' had been left out o' my life, an' that moment I found out what it was. But I never meant to take any advantage o' ye, an' kep' my love to myself. But I've lain out there under the stars, nights, and gazed into the sky for hours an' hours, wonderin', jes' wonderin' to myself if it was possible one like you could ever find it in her heart to love one like me."

"And I—" Sylvine now leaned against his breast, and her arms, thrown back over her head, had caught Lem's neck. "I've been loving you all these days."

Lem's face was now drawn down until his cheek and Sylvine's were pressed together. And Lem whispered:

"Little 'un, ye've made me so happy I don't reckon I'll ever want to do anything else but laugh an' sing."—C. S. Reed, in American Queen.

HOW TO ENJOY COUNTRY LIFE AND WORK.

If the farmer's wife has not an inborn love of "green things growing" she is to be pitied. It is not necessary to have been born in the country to have this love. A physician tells of finding a child born and living in a city tenement, who had an onion growing in a tomato can. The child had polished the little window of the room in order that the onion might have a better chance.

It is quite necessary and a good deal more practical to have also ,a love of making the green things grow and taking a vital interest in all that pertains to successful growing in all departments of farm life.

Should a young woman fall in love with a farmer, and have a chance to marry him, she should ask herself "Am I in love with his vocation?" If she promises to take him for better or worse with the mental reservation, "I'll make it better by getting him out of his present business," she is doing a very foolish thing for both. A young wife with such an idea tucked away in her pretty stylish sleeve will find bitter disappointment in store for her.

She thinks he will go to the city to please her, because of his love for her. But in nine cases out of ten if the man spoke he would say: "I was tired of being nagged."

The intelligent young man who has spent several of his most receptive years in working a farm is fitted for anything except an entire change. Left where he is, he is in the way of becoming a chemist, a botanist, a machinist, a mechanic, a veterinary and an electrician, for it takes all these sciences to run a farm properly these days.

Now let a city girl whose ideas of gentleman comprise clean finger-nails and a high white collar, take a man from an opening like this, and set him behind a clerk's desk or ask him to travel with samples of things in a big trunk, what will be the result?

"You look as if there had been a rise in real estate," laughed the girl he might have married, as the young farmer came in from the field with only his white teeth and the whites of his eyes visible for the dust.

"There really has been a great move in land in this wind," he replied, as he plunged his face into a basin of water.

"I feel as if I had married a coon," hummed the woman he really had married. "Thank heaven this is the last season he does that kind of work. He has promised to move into town." Afterwards she whispered, "He is really too much of a gentleman for that sort of thing."

Two years later the man was unloading cars for a coal company and his dainty wife was shedding tears of sorrow over her fatal mistake.

"But it is all such drudgery," says one. That depends on the point of view. When the trained nurse waits at the bedside of the sufferer hour after hour intent upon every method she can use to relieve pain; when the sculptor bends over his marble with brows knit in thought, and cheeks pallid from intense application to his art; when the artist lays down his brushes at the going down of the sun and walks across the studio to study the result of his long hours' work, or when the writer awakes from his absorption and finds his fingers all cramped and aching, do they talk of "drudgery?"

If a farmer's wife is interested in her work, it becomes to her a science, an art, an inspiration.

A woman once said, "The most strenuous year of my life was, I think one of the happiest. It was the first summer I had the use of the new milk house, with ice house attachment. We had just discarded the old milk pan and dasher churn, and I was happy as a child with new toys, in my cans for deep setting in a tank of cold water, and the new barrel churn. I churned every morning all summer long except Sundays, and sold forty pounds of butter a week.

With what pleasure she recalled that the butter reached her private customers all that summer with the napkins which wrapped the rolls of butter frozen to the roll.

"There was," she said, "an elm tree growing near the door of the milk house, with its slender limbs reaching over the door. Every morning, for weeks, when I was churning, an oriole or golden robin came and sang to me, sitting on a limb not over twenty feet above my door. Whether the rhythmic beat of the cream against the side of the churn attracted the lovely songster or not, I had no idea. There the little fellow sang to me every morning for weeks, making a musical accompaniment to my work."

After the butter was carried to the cellar and the room cleaned up, a bowl of roses was always placed on a shelf near the tank through the whole rose season, for nearly every hour of the day some of the family was there for a drink of cold milk or a tool from the chest which stood in a corner.

"That was twenty years ago," said she, "but ever since, the scent of roses or the sight or song of the golden robin brings thoughts of that happy summer's work."

Dr. Holmes said that we talk to find out what we think. I believe the average farmer's wife would not understand what he meant. Her thoughts and ideas are a part of her—as the shrubs she had planted are part of her garden. As one of them sings, "These are the thoughts I think myself, in my backyard," and they were beautiful thoughts that had come from country living and country thinking.

This yard with all its homely details may prove the vantage ground of many a victory, the background of many a renunciation, which really means achievement.

In retrospection the farmer's wife may often see all these things and lifting her eyes away to the eastern sky line, or looking over west perhaps, to the forest or hills or away—away over infinite stretches of vastness, their influence quiets the storm that often breaks over less disciplined souls, and she feels with the Hermit of the "Little Maxie" that all these great thing of the earth are saying "Hush!" "Hush!" and she understands.—The Farmer's Wife.

Cookery Recipes

Cold Slaw.

Cut 1 medium sized cabbage head, salt and let lay 2 hours, and squeeze out all the salty juice and place in a dish. Add to this half cup sugar and two-thirds cup of cream (either sweet or sour) and stir until it is foamy, then add two-thirds cup of lemon juice.

* * *

Buttermilk Nut Cake.

Two cups granulated sugar, half cup butter, two cups fresh buttermilk, 1 large teaspoon soda in milk, 1 cup chopped raisins, 1 cup chopped English walnuts, 3 level cups flour, 1 teaspoon nutmeg, 1 teaspoon cinnamon, bake slowly.

* * *

Pumpkin Pie.

To a quart of boiled milk put a quart of strained pumpkin, add one and one-half cups sugar, 4 well-beaten eggs, a teaspoon each of salt, cinnamon and ginger and 1 dessert spoon butter melted in the hot milk; to mix the ingredients, stir the sugar, cinnamon and salt into the pumpkin, add half the milk and stir well together and then add the remainder, and lastly the eggs. The recipe makes four pies and is very nice.

* * *

Mush, Corn Meal.

Into an iron kettle put 2 quarts of water, salt and when boiling thoroughly sift slowly through the fingers 1 pint of meal, that it may be very smooth; boil and stir 15 minutes, then set back on stove and cook slowly for one hour.

For Frying—Pour the hot mush into an earthenware bowl containing 1 tablespoon of milk, that it may turn out smooth when cold; then cut into three-quarter-inch slices, roll in flour, place in hot skillet containing 2 tablespoons of butter and 1 of lard (or use meat fryings,) brown slowly. turn and finish on back of stove for 30 minutes.

Milk is an excellent substitute for soap in washing dishes. It not only softens the hardest water and gives dishes a clear, polished look, but it prevents the hands from chapping . It also prevents a greasy scum appearing on the top of the water. Use about half a pint to a gallon of very hot water.

Even the pure-water drippings from the faucet leave their mark until with much wiping and much polishing we are mad—in more senses than one.

Kerosene in the boiling water whitens clothes safely, especially such as are yellow from lying. Put in a tablespoonful to each gallon of suds.

Farmer Hyer—"How much milk does your cow give?"

Farmer Myer—"She never gives any; you got to take it."

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Veterinary

BY DR. W. J. OLIVER,
318 East Second St., Los Angeles

To the end that this department may be made as valnable to the subscribers as possible, we ask observance of the following: Be sure to state in full the history of the case, location of the disease and the conditions under which the animal has been kept just before and since the disease appeared. Give your name and address, which will not appear in the paper if you so request. No charge whatever is made for such questions as are answered through the colums of the Cultivator, but when an immediate mail answer is wished Dr. Oliver asks an additional fee of $1.00 and will give immediate attention and reply by mail. In such case write Dr. W. J. Oliver, 318 E. Second St., Los Angeles, Cal.

Questions should be in by Monday to be answered in the following Friday's paper.

CHRONIC LYMPHANGITIS.

Editor Cultivator.—I have a horse that has chronic lymphangitis. One hind leg has been in an enlarged condition for several years. About a week ago he had another attack of the disease and both hind legs became much swollen. I should like to be advised whether or not there is any known cure for this disease. The horse is valuable and at least worth effort to remedy his condition. C. M. D., Lakeview.

It will be impossible to remove the swelling, chronic, form. You can help the recent attack by giving a physic, and afterwards give dessert spoonful of Nitrate Potash once a day for a week. Bathe the leg often with hot water with 1 ounce Kreso Dip to a gallon of water.

* * *

VACCINE VIRUS.

Editor Cultivator.—A man here wants to vaccinate his hogs against hog cholera. Says there is such a serum in the East, but has not been able to find out about it here to his satisfaction even by asking through the paper. He says you told him some plague is so often called cholera, in which case vaccination for cholera is not effective. Says he knows he has cholera sometimes in his herd and wants to know with what to vaccinate. H. G. H.

Yes. there is a product manufactured by the Bureau of Animal Industry at Washington, D. C. They claim it is a preventative and reduces the death rate about 70 per cent. You will have to apply to the Bureau for it and get instructions.

* * *

Ruptured Blood Vessel.

Editor Cultivator.—I have a horse that has gone blind with a light scum in the watery portion of the eye, caused from a strain which ruptured a blood vessel and caused bleeding from bowels. Is of dropsical nature, well from sickness for two months, but eyes do not improve. Can you give me a cure? D. D. B. Rialto.

Leech the film on the eye once every two days with nitrate silver. 5 grs water distilled 1 ounce. Use camel's hair brush. If the light affects the eye cover with dark cloth.

* * *

Ulcerated Membrane.

Editor Cultivator.—We have a horse that has an ulcerated sore on the side of his nose, extending from the edge of his nostril half way to his lip. The horse had the sore when I bought him over two years ago. I did not expect any difficulty in healing it, but it proves very obstinate. Have tried many ointments, etc., with little effect. Am at present using sulphate of copper, dissolved in water to cleanse it, then powdered sulphur rubbed on dry. The sore scales over and then if not washed off the next day it sloughs off and his nose is as sore as ever. He has several sore places along the line of the middle of his belly, from between his forelegs back to his sheath, where the hair is rubbed off and little swellings show, which evidently itch, as when rolling he will sometimes get squarely on his belly, work his body back and forth to scratch it. The horse is a high spirited, yet gentle animal and a fine traveller, but is thin in flesh most of the time. I feed him oat hay and two quarts of rolled barley twice a day. Kindly reply through the Cultivator as I am a subscriber withholding my name. R. H., Lakeview.

Apply a little calomel to sore day or two where it scales off. Wash the sores under the belly with solution of Kreso Dip tablespoonful to gallon warm water daily. Spoonful twice a day of Fowler's Solution.

The Produce Markets

Los Angeles Markets.

Los Angeles, Feb. 8, 1906.

Eggs are lower than for many months and no advance is expected soon, as the supply of both local and imported is constantly increasing with the advent of warm weather.

Butter maintains a firm tone as quoted, with no prospect of a change unless heavy rains come and increase the supply of green feed. Cheese receipts are heavy and the demand active.

Vegetables are more plentiful and prices easier.

Poultry supply is light and the demand good.

Butter.

B. of T. Creamery, per roll	.70
Valley Creamery, fancy	.70
Valley Storage	.60

Cheese.

Cal. 3-lb hand	19½
Cal. Young America	18½
California Anchor	17½
Northern	16@17
Domestic Swiss	19@20
Imported do	26½@27

Eggs.

Eggs, French Ranch	.26

Poultry.

Fryers, 2 1-2 lbs.	.18
Broilers, under 2 lbs., per lb.	.18
Young Roosters, per lb.	.17
Hens, per lb.	.15
Ducks, per lb.	.14@15
Geese	.14@15
Turkeys	.19

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock:

Hogs, 200 lbs.	6¼
Prime Steers	4
Cows	3¼
Calves, cwt	4.50
Sheep, ewes, per head	5.00
Lambs, per head	3.25
Wethers	5½

Potatoes.

Northern, per sack	$1.50@1.75
Locals, per cwt	1.10@1.25
Sweets, white, per cwt.	1.75@2.00
Sweets, yellow, cwt.	2.00

Vegetables.

Onions, Australian Brown, cwt.	1.75@2.00
Onions, yellow, cwt.	1.75
Garlic	7@10
Cabbage, per sack	35@50
Cauliflower, per doz.	35@60
Lettuce, per doz.	15@25
Bell Peppers	15
Lima Beans	10@15
String Beans	15@17
Beets	40
Green Onions, doz. bunches	20@25
Carrots, doz. bunches	40
Turnips, doz. bunches	30@40
Celery, per doz.	35@40
Peas, per lb.	4@4½
Egg Plant	8@10
Chili Peppers, green	6½@8
Tomatoes, local	75@1.00
Parsley, per. doz. bunches	60
Hubbard Squash, per lb.	1½

Citrus Fruits.

Lemons, standard	1.25
Lemons, choice	1.50
Lemons, fancy	1.75@1.85
Grapefruit	1.25@1.50
Navels	2.00

Fresh Fruits.

Apples, Bellefleur	1.35@1.50
Fall Pippins	1.00@1.10
Red Pearmain	1.00@1.25
Strawberries, per crate	3.00@3.50
Guavas, per basket	3½@4
Pears, Winter Nellis, per lb.	4
Casaba Melons, large crates	2.25@2.50

Dried Fruit.

Apples, evaporated, ex ch, 9; ch, 8½.

Pears, Winter Nellis, per lb...4½@5

Apricots, ex ch, 11; 9; ch, 8½.

Peaches, fy, 10½; ch, 9.

Santa Clara Prunes, 30-40, 8½c, 40-50, 7½; 50-60; 60-70, 6½.

Loose Muscatel Raisins, 2-crown 4½; 3-crown, 5; 4-crown, 6.

Beans, Dried.

Limas	5.00@5.50
Pinks, fancy	2.50@2.65
Lady Washington	3.00@3.10
Small White	3.50@3.75
Black Eyes	5.50@6.00

Nuts.

Walnuts, No. 1, soft shell	14½
Do, No. 2	8@10
Do. No. 1, hard shells	12
Do. No. 2, hard shells	10
Almonds, paper shells,	16@17
Almonds, soft shell	14
Peanuts, California	6@7½

Honey.

Honey, comb frames	14@15
White, strained, per lb.	6½@7
Light Amber	6
Amber	5
Beeswax	27

Hay.

Barley	12.00@16.00
Alfalfa, local	14.00@16.00
Alfalfa, Northern	13.00@14.00
Wheat	14.50@16.00
Tame Oat	14.50@16.00

Grain.

Selling prices of mill stuffs f. o. b. cars L. A., in quantity, are:

Rolled Barley	1.40
Bran	1.40
Feed Corn Meal	1.50
Shorts	1.50
Wheat, per cwt.	1.65@1.70
Cracked Corn	1.45
Oil Cake Meal	2.10
Cocoanut Meal	1.55

Mrs. M. A. Ellis offers bees for sale this week.

J. C. Peters of Hemet, advertises a fruit and poultry ranch for sale.

J. C. Ostergard and S. Fairburn are advertising watermelon seeds for sale in this issue of the "Cultivator."

Attention is called to the advertisement of the Henry L. Bauer nursery in this issue. Everythng for the home, garden or ranch.

A ranch in Shasta county is for sale and advertised in this paper by M. J. Forbes.

White Plymouth Rocks are offered for sale by Mrs. Hansen, of Coachella this week.

Ira D. Brown advertises an excellent garden tool in this issue.

If you are looking for a good ranch, notice the Chino ranch advertisement on another page.

Fine berry plants can be had of S. T. Stanfield, whose ad appears in this issue.

SEED PEANUTS FOR SALE.
Best Californias: foothill grown: shelled or unshelled. The best seed in every way. Quantity limited. Place orders at once. Prices very low.—H. E. WARD, Charter Oak, Cal.

A NEW NURSERY CO.

The Sycamore Grove Nursery and Landscape Co. is the name of the successor to the old Sycamore Nursery Co. of Los Angeles, formerly owned by I. J. E Saint. Mr. Saint is still connected with the company and with him is associated Mr. W C. Warner, formerly of San Diego. The new company will carry a full nursery line and in addition will do a general landscape work. Places will be landscaped set out, and if desired, will be cared for during the first few years.

San Francisco Markets.

San Francisco, Feb. 7, 1906.

Butter.

Weaker markets prevailed for all descriptions of Dairy Products yesterday, the continued mild weather causing increased arrivals and buyers, in anticipation of lower prices, restricting their orders to absolute current needs.

Fresh Calfornia extras	28½
Fresh California, firsts	27
Fresh California, seconds	24
Eastern extras	25½
Storage, California, extras	25½

Cheese.

California, new	13½
California firsts	13
California seconds	12
Eastern, Cheddars	15½
Storage, California	14
Storage, Eastern	15

Eggs.

Receipts of Eggs showed a material increase, reaching the highest point for any one day this season, and under a general selling pressure values for all grades were lower and the market was easy at the decline. There were free offerings of Ranch under call on Change at 23c, and a small quantity changed hands.

Eggs, Frech Ranch	23
Firsts	22
California Storage	22
Seconds	21

Poultry.

Old Roosters, per doz.	4.50@5.50
Young Roosters, per doz.	6.00@7.00
Hens, per doz.	4.50@7.00
Ducks, per doz.	5.00@7.00
Turkeys. per lb.	15@18
Geese, per pair	2.00@2.50

Live Stock.

The live stock market is booming, supplies of most kinds being extremely light and the demand vigorous. All descriptions of Cattle are quoted at improved prices and Hogs are held at higher basis figures, ruling strong under keen competitive demand. Lambs are also firmer.

Hogs. per lb, 80 to 130 lbs.	6¼@6½
Hogs, per lb., 130 to 250 lbs.	6¼@6¾
Hogs, per lb., 250 to 350 lbs.	6
Hogs, per lb., rough heavy	4½@5
Prime Steers, lb.	7¾@8
Cows, per lb.	5½@6¼
Calves, lb.	5@5½
Sheep, ewes, per lb.	4@5
Lambs, per lb.	5@6
Wethers, per lb.	5@5½

Potatoes.

River Burbanks	50@85
Oregon Burbanks	75@1.20
Salinas Burbanks	1.00@1.50
Sweets, Merced	75@1.25

Vegetables.

Onions, yellow, per sack	1.00@1.15
Bell Peppers, green	17@22
Cucumbers, per doz.	1.00@1.50
Tomatoes, per box	1.00@1.50
Strings Beans	18@20
Wax Beans	18@20
Summer Squash, per box	1.00@1.50
Green peas, per lb.	6@7

Citrus Fruits.

Navels, fancy	2.00@2.75
Seedlings	1.00@1.25
Lemons, standard	1.00@2.50
Grapefruit	1.00@3.25
Tangerines	1.00@1.50

Fresh Fruits.

Apples were in light supply and firm at the old standard of values.

Apples, per box, extra	1.75@2.00
Apples, fancy	$1.25@1.50
Cranberries, per bbl	15@16

Grapes, per box or crate	1.00@1.25

Beans, Dried.

Limas	4.90@5.00
Pinks	2.00@2.15
Small Whites	3.15@3.25
Black Eyes	4.50@4.75
Bayos	3.50@3.75
Red Kidney	3.50@4.00
Horse Beans	1.65@1.85

Hay.

Barley, new	$8.00@11.00
Alfalfa	7.50@12.00
Wheat	11.00@16.00
Oats	7@12.50

Grain.

Wheat	$1.33½@1.36¾
Barley	1.22
Corn	1.33
Oats	1.50@1.70
Rye	1.45@1.52
Rolled Barley, per ton	26.00@27.00
Bran, per ton,	19.50@20.50
Feed Corn Meal, per ton	20.50@30.50
Middlings ½	26@30
Cracked Corn, per ton	30@31
Oil Cake Meal, per ton	37.00
Cocoanut Cake, per ton	22.00

Hops.

Grades	8@11

CITRUS MARKETS

The citrus market has been very strong at most Eastern points during the past week, and prices have been uniformly good. In New York the sales have run from ten to twenty-five cars per day, while in Boston the average has been about fifteen cars daily, with Philadelphia about the same; other points correspondingly. Heavy consignments of foreign lemons are arriving in good condition and bring good prices.

NEW YORK, Feb. 6.—Twenty cars sold at auction today. The market is 25 cents lower. The weather is very cold.

NAVELS.

	Averages.
Golden Rule, xc, Riverside Ex.	$2.35
Quail, xc, O. C. Exchange	2.35
Tallyho, ch, S. B. Co. Fr. Ex.	2.35
Eagle, xc, Riverside Ex.	2.40
La Mesa, xf, Riversile Ex.	2.45
La Mesa, xf, Riyerside Ex. (½s)	1.40
Puritan, fy, S. B. Co. Fr. Ex.	2.50
Royal Knight, xf, R. H. Ex.	2.50
Our Pride, xf, Riverside Ex.	2.50
Alhambra, xc	2.20
Corona Queen, xc, Spence F. Co	2.20
Mocker, or, Spence Ft. Co.	2.30
Aurelia, xf, Spence Ft. Co.	2.40
Special CCU Redlands	2.40
Foothill	2.15
Red Keystone, xc, King Ft. Co.	2.25
Blue Keystone, fy, K. Ft. Co.	2.35
Standards	2.25
Independent, xc, Highland	2.30
Independent, fy, Highland	2.35
Independent, fy, Highland	2.35
Independent, fy, Highland	2.40
Independent, fy, Highland	2.45
Mountain Lion, fy, F. H. Speich.	2.30
California Sunshine fy, Or. Gro Cash Assn., Redlands	2.35
Signet, xf, O. G. C. Assn. Redl.	2.55
Carnation, xc, Moulton & Greene	2.35
Orchard, or, Natl. Or. Co.	2.80
Clover, xc, Red. Or. Gro. Assn.	2.35
Rose, xf, Red. Or. Gro. Assn.	2.55
Rialto Girl, fy, F. P. Corson	2.40
Big Find	2.45

THOMPSON IMPROVED NAVELS.

Blue Keystone, fy, King F. Co.	2.55
Red Keystone, xc, King F. Co.	2.30

LEMONS.

Aurelia, xf, Spence Ft. Co.	2.40
Corona Queen, xc, Spence Ft. Co.	2.25

GRAPEFRUIT

Independent, fy, Highland	2.45

TANGERINES

Flower, fy, F. P. Corson	1.85

Foreign Lemon Sale.

NEW YORK, Feb. 6.—Twelve thousand boxes of Sicily lemons were sold at auction today; they were in good condition. The market is firm. The next sale will be held on Friday, when 7000 boxes will be offered. Prices realized were as follows:

Fancy 300's, $2.20 to $2.50.
Choice 300's, $1.95 to $2.20.
Fancy 360's, $2.25 to $2.40.
Choice 360's, $2.00 to $2.25.

CALIFORNIA VEGETABLE GARDENS.

(Continued from first page.)

done. The same applies to us. It takes a strong will to throw out what looks like prospective profits. But the increase comes by culling closely. We should make the standard so high for our produce that the Oriental's stuff will be relegated to the rear. It should be so good that it will be American. The distinction should be so plain that the dividing line will show in the market.

Gardening is not all pleasure and profit. But the commonest of garden products are profitable when properly handled. A commision merchant said to us a few days ago, "Why don't you grow lettuce? There is $300 dollars per acre in it." He did not intend to convey the idea to me that all who grow lettuce are making $300 per acre. Let us see. Set lettuce 8 inches apart in the row, set the rows 12 inches apart and on one acre can be grown 5308 dozen heads. This leaves nothing for loss in growing but an expert is directing the work and under a high state of cultivation they are all growing and thriving. He will have some culls. but not as many as the novice. It can be readily seen that $300 per acre is a conservative estimate. And yet this is one of the commonest of garden products.

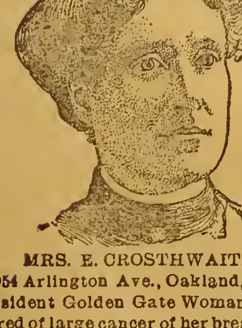
The point is made that the price that our land values have attained will not justify farming it. This is not true in the face of such figures. It will stand yet another raise. The resourcefulness of our soil and our proximity to market will give it yet another jump. It is our best avenue to intensive farming. It is the kind in which we can make every inch pay. The time was when one could grow some garden on part of the land and let the remainder go to barley, or some other cheap crop. Time is too precious and values too high to do so now. We can not afford to have pasture land. Feed the vines and the culls to the cow or to the poultry. or to something else that helps to make the living. There should be no waste in the fields of the market gardener. Neither in space nor product. With reference to space, do not think of the acres, but watch the inches. The rows sould be correctly spaced that the water and cultivator may have full effect. Care should be used in preparing the seedbed and planting that the stand may be perfect. The soil should be watched and carefully guarded. Should it cement below the points of the cultivator, break it up. Should the humus disappear, restore it with a coating of stable manure between the crops. There are so many things to watch. And the greater is the necessity of a concentration of effort. If the forces of the gardener are thus placed in one line the result will be entirely beyond the conception of the careless one who tries to fill the entire list of market quotations.

The field is open and it is large enough for all who desire to enter the contest. It is so varied that the rich and poor have a like show. Gardening under cover with artificial heat is a line in which the man of means can enter. He can use his science and money in making the season to grow that which is most fascinating to him, and with good returns. The poor man can take his $40 dollar horse cultivator and hoe and make a showing. He requires but little land as so many of the crops require but from three to five months to mature. He who has but little space can take up special work accordingly. It is not within the scope of this paper to treat of this special work even if we had the knowledge to do so. The Agricultural Department at Washington has bulletins, for free distribution, by the very best authority, on all subjects in which one may be interested. These give fully the culture and treatment of different plants as well as the best methods for subjecting and destroying their enemies. And in the power to overcome the enemies of the garden lies a large part of the gardener's resources; the treatment of seed and plant to prevent its destruction or the marring of its beauty. On the other hand the use of nitro culture and the application of fertilizers best suited to the condition of the land and the crop desired, tend to the very highest state of perfection and the greatest quality possibly may be attained.

The culture of mushrooms, horseradish, pie plant and even flowers for market—things not so common as peas, beans and melons which we all grow—might make fame and fortune for some one in Gardena valley should it be undertaken.

Then, the co-operative idea of growing, by uniting the entire community in their individualized lines for the season, and marketing in this way; thereby enabling the community to ship in assorted car lots is worthy the consideration of our gardeners. The affairs of the industry should be conducted in a way that the term truck gardener will no longer be applied, but that of Market Gardener in highest sense of the term. Let the Chinaman be the truck gardener. But we Americans should be the market gardeners and give the industry that dignity, pleasure and profit that is the envy of our fellow man from what ever country he may come. (Paper read at Gardena Farmers' Institute.)

CANCER
IN WOMAN'S BREAST
ANY LUMP IS CANCER
Mailed Free—How to Cure Yourself at Home—No Pain—No Risk.
NO PAY UNTIL CURED—GUARANTEE—JUST SEND YOUR NAME



MRS. E. CROSTHWAITE,
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President Golden Gate Woman's Club,
was cured of large cancer of her breast, side and armpit by Dr. Chamley's medicine in 14 days. *Don't doubt, don't delay.* WRITE AND ASK HER. You have nothing to lose—everything to gain by doing what I tell you. You can't afford to trifle with Cancer. Life is surely worth sending your name. 130-page book sent free.
My discovery—a Pacific Island plant extract—has cured thousands of Cancers in from 10 to 20 days, after celebrated physicians and surgeons had declared them "as good as dead."
Address, Dr. and Mrs. Dr. Chamley & Co.,
25 Third Street, San Francisco, Cal.
KINDLY SEND THIS TO SOME ONE WITH CANCER

OPIUM and **Whiskey Habits** cured at home without pain. Book of particulars sent **FREE.** B. M. Woolley, M. D., Atlanta, Ga., 103 N. Pryor St.

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Consider them worn out. Come in and see our line of Syracuse Goods, consisting of Syracuse
Disc Plows, Solid Comfort Jr. Sulky,
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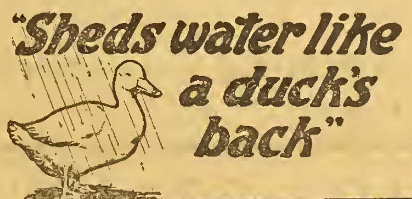
Walking Plows, Steel and Wood Beam Chilled Walking Plows
and the old reliable
Fosmir and Stockton Reversible Gang Plows,
the California Disc Plows, Three Gang and larger,
manufactured by us to stand and do the hardest kind of work
Do not fail to see this plow before buying, also Syracuse Steel Lever Harrows, Spring Tooth Harrows, etc. Have you seen the best Wagon on the market? You have not unless you have cast an eagle eye on the Harrison; and remember the location, which is the important part
L. A. MARTIN & SON 137-143 WILMINGTON ST., formerly Old San Pedro St., LOS ANGELES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An ideal roofing must be absolutely water-proof, practically fire-proof and alway weather-proof.

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Rubber Sanded Roofing
Is proof against everything an ideal roofing should be proof against. Water flows off of it as fast as it falls. It is practically a fire-proof roofing—cinders, sparks or blazing brands falling upon it will burn themselves out, without injury to the roof. It is weather-proof in every climate. A building is warmer in winter and cooler in summer, than under any other class of roofing, because it is a non-conductor. Be sure to investigate thoroughly, that
Wear-Proof Surface of Clean Flint Sand.
"Pioneer" Rubber Sanded Roofing is put up in rolls—ready to lay and is easy to put on. A complete kit of roofing supplies is furnished with each roll. Our Booklet "D" will tell you all about the roofing question. Send for it today.
Pioneer Roll Paper Co., Los Angeles, Cal.

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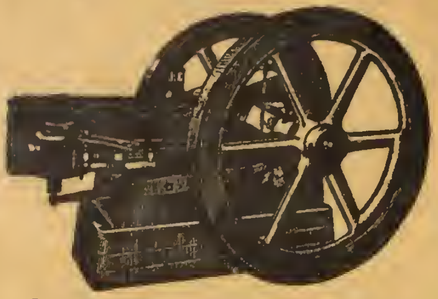

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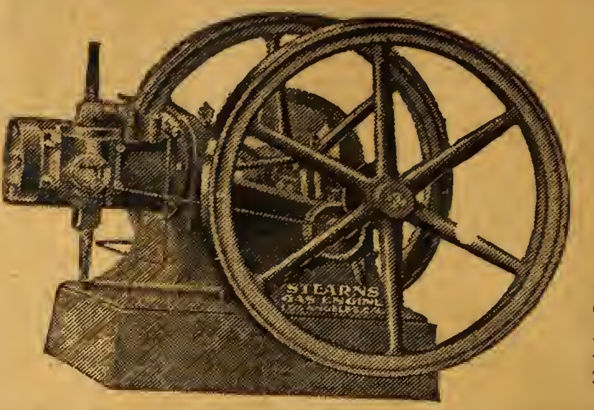
STEARNS GASOLINE OR DISTILLATE **ENGIN**



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TRIED FOR MANY YEARS

And now stands without an equal. That is the verdict of many who have used the

WHITE & MIDDLETON ENGINE

Complete Irrigation Plants Installed.
Estimates gladly given,

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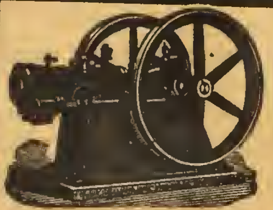
Stockton Reversible Gang Plow

EFFECTIVE DURABLE LIGHT OF DRAFT

This is our regular Plow and Land Shifter and Rear Lever. Land Shifter simple and durable. It is in easy reach of operator and there is no danger of wheel running over foot.

Houser & Haines Mfg. Co.
Stockton, Cal.



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A booklet, "The Whole Story About Wood Pipe," mailed free upon request

NO, THIS IS NOT AN ARTESIAN WELL, BUT

AN IRRIGATION PUMPING SYSTEM
SUPPLIED BY
S. J. SMITH MACHINERY CO.
POWER PLANTS, PUMPING MACHINERY AND WATER SUPPLY GOODS 212-214 S. Los Angeles St., Los Angeles, Cal.

The New Pomona Pump

We must not attribute all of the success of the Pomona Pumps to the Pump Head or the part of the machinery above the ground, for there is another part just as essential, and this is the cylinder and valves. Our cylinders are made of the best seamless brass tubing made to our order in the East. The valves are made of the best phosphor bronze and are cast and finished complete in our shop.

These valves are of the most improved pattern, have cone-shaped clappers with ground metal seats. There is only one moving part in each valve and we have never had them clogged with sand. The plungers are furnished with three cup leathers, each made from the best oil tanned leather.

With the New Pomona pump-head using a quick return motion and lap in the plungers, these valves have sufficient time to seat before taking up the load of the water column, consequently there is no hammer or jar. The Pomona Pumps are taking the lead for irrigation purposes and are rapidly displacing pumps of inferior design and workmanship.

Send for catalog and estimates for our new plants.

Pomona Mfg. Co.
POMONA, CAL.

CALIFORNIA
CULTIVATOR
DEVOTED TO
AGRICULTURE
IN ALL ITS BRANCHES

Los Angeles **FEBRUARY 16, 1906** **San Francisco**

A Dairy Scene
in Mendocino County.

Courtesy Cal. N. W. Ry.

Dry Creek Valley Corn,
Sixty Days from Planting.
No Irrigation or Rain.

MALTHOID ROOFING.

An exceptionally valuable product selected by the builder of the new nine story Bilicke-Rowan hotel.

It is a well known fact among the builders of some of our latest and most expensive structures, that Malthoid roofing has been an important factor. Twenty-one years' experience in making, improving, laying and perfecting roofings enabled The Paraffine Paint Co., the manufacturers of Malthoid roofing, to produce in this material a roofing that is as nearly perfect as possible, and when compared with other roofings is noticeably superior, even to the laymen.

Malthoid roofing is coated with non-oxidizing weather-proof coating, this combination producing a roof covering good for all time, in all climates, under all conditions. Malthoid roofing is absolutely acid-proof, alkali-proof and fire resisting. Red hot coals placed on the flat surface will burn out and not ignite the roofing. Fumes smoke and gases mixed with rain or fog often produce an acid that destroys and decays metal roofs such as tin and iron, but have no injurious effects whatever on Malthoid roofing. Firebrands and sparks very often set fire to shake and shingle roofs while they become dead on a building covered with Malthoid, without injury to the roofing.

The writer of this article was shown many letters from users of Malthoid roofing, congratulating the manufacturers upon their success in manufacturing a fire-resisting roofing. The management of the Lewis and Clark Exposition selected Malthoid roofing for the covering of the fair buildings at Portland. The Paraffin Paint Company received the highest award at the Lewis and Clark Exposition on their Malthoid roofing, P. & B. Ready roofing, building papers and damp-proof compound. Malthoid roofing is a splendid roofing for high-class buildings and dwellings, yet cheap enough for factories, warehouses, depots, wharves, barns, schoolhouses, etc. Malthoid comes in rolls very compact, conveniently handled and cheaply transported at a low freight classification. The offices and warerooms of the Los Angeles branch of the Paraffin Paint Company are situated at 313 North Los Angeles street, city, from which point all business of the company is taken care of in the southwestern part of the United States, under the management of Mr. E. G. Judah. Agencies in almost every town west of the Missouri River. Refinery and factories at Paraffin, Alameda county, California. Main offices San Francisco, Cal., 24 Second street.

CONTROLLING NATURE.

Among the interesting steps in modern progress has been the control and development of plant life. People now living can remember when the number of edible fruits and vegetables was far less than at present, and even those that could be grown were vastly inferior to what we now have. For example, our parents knew nothing of the tomato except as a curious ornament in the garden. Sweet corn was hardly better than the commonest field sorts. All oranges had seeds. Celery was little known and poor in quality. In the flower beds the magnificent pansy has replaced the insignificant heart's ease from which it was developed, and the sweet pea traces its origin to the common garden vegetable. The practical results are accomplished by men operating largely for love of the work,like Luther Burbank in California and Eckford in England, as well as by the great seed merchants. D. M.Ferry & Co., of Detroit, Mich., who are not only externally vigilant to hold what ground has been gained, but have a corps of trained specialists backed by ample means to conduct new experiments. The results of their experience can be found in their 1906 Seed Annual which they will send free to all applicants. Mention Cultivator.

W. H. Brown, agent Armours Fertilzer Works has a card in this paper which should interest everybody who is considering the question of using fertilizers. See his advertisement and write for particulars.

The M .Bettman Co., of San Francisco, advertise "Caustic Soda" and parties interested will find it to their advantage to correspond with this firm.

$500! What About It!

Look for a Little Envelope in the 100 lb. Sacks of

Coulson's Special Dry Chick Feed

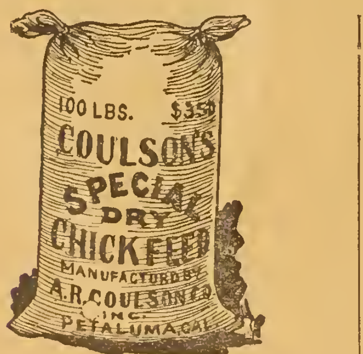
For Little Chicks and Turkeys

Send me another sack of Coulson's Chick Feed. It seems to be just the thing for young chicks, they are doing fine.—H. A. DUN, Tacoma, Wash.

$500

It's Great Food to Make Chicks Grow

$500



You will have the best success you ever had in raising chickens if you will feed COULSON'S SPECIAL DRY CHICK FEED. Send for sample. Its good for turkeys as well.

This Chick Feed is composed of small pieces of cracked grains, also a variety of seeds and small pieces of charcoal, meat and bone. It therefore contains a variety of the best and most wholesome ingredients in the right proportions to promote the growth of chicks and turkeys and fully nourish them so they will reach maturity early, and be vigorous, strong, healthy birds.

ECONOMY IN USING COULSON'S SPECIAL CHICK FOOD.

By a series of tests it is found that chicks will gain weight much quicker on COULSON'S CHICK FOOD, AND at less cost than those fed on grain.

Chicks fed on COULSON'S CHICK FOOD will reach the weight of two pounds a month sooner than those fed on grains, and they will reach the average weight of three pounds eight weeks sooner.

With COULSON'S SPECIAL CHICK FOOD and COULSON'S GROWING CHICK FOOD many succeed in raising from 95 per cent to 98 per cent of the chicks hatched and you can do as well. TRY IT THIS YEAR.

Mr. Poultryman, there is only one way to buy, and that is, on record of what you want. If you want to raise lots of nice chicks, buy good feed.

I think your Chick Feed in fine. I never lost one while I fed it. and never saw chicks grow so fast in my life.
MRS. HATTIE DEAN.
Mesa, Washington.

COPIES OF LETTERS RECEIVED.

I like your Special Chick Food better than anything I have ever used.
MRS. GEO. THISSELL, Jr.,
Winters, Cal.

$500. What about it?

I have used your Special Chick Food since last March, and am still using it. I believe it to be all right. I have lost less chicks than other years. It is good—the best I ever bought.
R. A. WHITFORD.

I have used your Special Dry Chick Food and recommend it to all my neighbors.
MRS. IDA L. PARKER,
Eureka, Cal.

BEGINNING LIFE ON COULSON'S CHICK FOOD

Our chicks are doing splendidly on the Special Chick Food. No losses except by accident.
J. HUNTER.

COULSON'S FOODS GIVE BEST RESULTS.

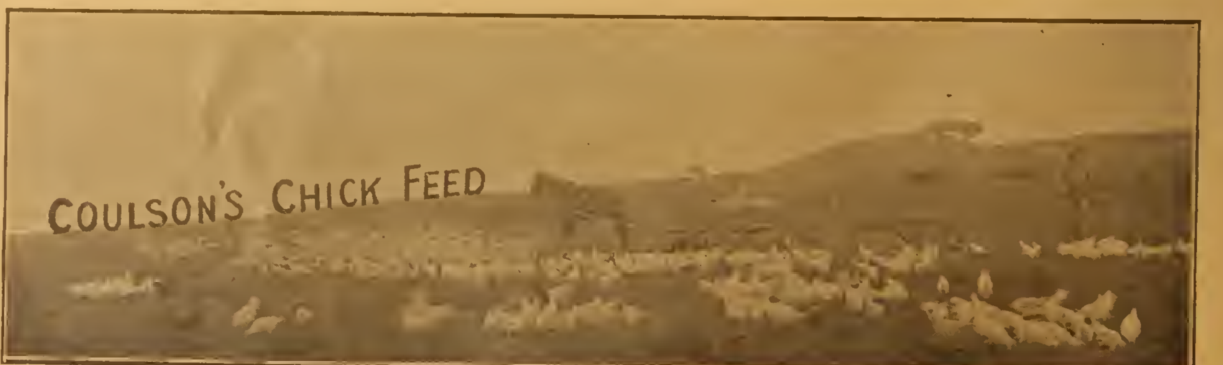
I am a user of Coulson's Chick Food and have raised 1100 chicks this winter. The first hatch I used some other food and lost over sixty. My second I raised on COULSON'S CHICK FOOD, according to directions, and lost only ten. Then in my third hatch I fed COULSON'S CHICK FEED—dry—three times a day for three weeks and out of 394 chicks, I lost only two, and all are doing fine. Now, chicken raisers in this locality are wondering at my success, and I am praising COULSON'S FOOD as much as I know how. (Signed) F. E. HEUSEL,
Half-Moon Bay, Cal.

COULSON'S CHICK FOOD.

Contains ingredients that long experience in poultry raising has found best adapted to give nourishment to growing chicks. It is promptly digested; causes no indigestion; keeps bowels in normal condition. Chicks show increase in weight, strength and beauty when fed it exclusively. Little chicks need no other food for the first five or six weeks. Save your chicks and make good profits.

Keep them from bowel trouble and all ailments incident to the first five weeks. Profit lies in the chicks you raise to maturity—not in the number hatched. Give them a ration that makes healthy, well developed bodies

Remember Mr. Basset sold broilers only six weeks old for $3.75 a dozen. They were fed on Coulson's Chick Food.



TEN WEEKS OLD CHICKS RAISED ON COULSCN'S CHICK FOOD

COULSON POULTRY AND STOCK FOOD CO., PETALUMA, CAL.

your dealer does not handle Coulson's Special Dry Chick Feed, Write to Us, and we will tell you where and how to get it, and save you money

CALIFORNIA CULTIVATOR

Vol. XXVI—No. 7 LOS ANGELES, CAL., FRIDAY, FEBRUARY 16, 1906 Subscription $1 a Year

Relation of Handling to Keeping of Fruit

By C. Harold Powell, Pomologist, Washington, D. C.

At a recent meeting of the American Society of Refrigerating Engineers, we discussed some of the problems that the fruit grower has to face in building up and extending the American fruit trade. The keynote which determines the stability of the fruit business is a system of transportation that insures the distribution of the crop in sound condition to distant domestic and foreign markets. The discussion referred to the problems in transportation especially concerned with the comparatively slow refrigeration of fruit in refrigerator cars, in the solution of which the interest of the Refrigerator Engineers was solicited. In former discussions before this association it has been pointed out that a large proportion of the losses in the cold storage of fruit is the result of the ripening that takes place after the fruit is harvested and before the temperature is reduced to a degree of cold that retards the ripening processes and the development of decay; that delaying the fruit in the orchards, the packing houses, in transit, or its storage at the warehouse is detrimental to the keeping quality. We have pointed out that the fruit in the center of a package that radiates the heat slowly, or in the warm air in the top of a refrigerator car, or in any other condition that accelerates the life processes or stimulates the growth of decay organisms, shortens the life of the fruit in the warehouse. A refrigerator car is a warehouse on wheels, differing from a cold storage warehouse in having smaller capacity, less refrigerating power and more variable conditions of temperature and humidity. The factors that influence the keeping of fruit in one apply to the behavior of the fruit in the other, with the important qualification that the effects of handling the fruit improperly before it is shipped are more serious in transit than in a warehouse, as the ripening and the decays continue longer before they are finally checked. The need of checking the ripening and the decays by efficient refrigeration is an axiom at the foundation of successful fruit handling, applying with equal force to the keeping of fruit in transit and in permanent warehouses.

Mechanical Bruising the Cause of Much Decay.

There is another phase of the fruit transportation and storage business which needs to be more clearly understood. It is the relation of the physical condition of the fruit to its shipping and keeping qualities. To keep or ship well, it is fundamental that a fruit have a whole skin. Cuts, ruptures, or abrasions of any kind, are likely to be followed by infection by molds. The scores of these organisms are scattered abundantly through out the air, and they cause the fruit to decay if the conditions are favorable for their growth. On the other hand, the spores may come in contact with a perfect fruit without injury to the latter. The fungus cannot penetrate the skin unless the fruit is weakened by over-ripeness or by some other cause. This phase of the fruit handling business has been discussed from the earliest days of commercial fruit culture until it has been worn about thread bare. There is much need of so much progress along this line, and it is of such fundamental importance to the fruit grower, the transportation companies and the warehouse-men, that we desire to bring it up anew and discuss the relation of some of the Department investigations to the commercial losses that occur in shipping and storing as a result of handling the fruit roughly in the orchard and packing houses.

Molds Gain Entrance Through Mechanical Bruises.

A large proportion of the losses in apples, pears and oranges in storage and in transit, and of small fruits as well, are caused by molds of various kinds. We desire to distinguish between the losses of this nature and the losses that result from the over-ripeness of the fruit, from old age. A fruit may die from old age, or it may be killed prematurely by the attacks of some disease. The common soft rot that causes re-packing of apples is a blue-mold rot. The decay in oranges and lemons in transit is usually a blue mold trouble. There is a pink mold that often attacks apples when the skin has been ruptured by the apple scab. Other kinds of molds grow in peaches and small fruits when the skin is broken.

These molds usually enter the fruit through an abrasion in the skin. The cuts or ruptures can generally be seen with sharp eyes without the aid of a microscope. If there is moisture enough present and a temperature high enough to germinate the spores and start them into growth, decay is the inevitable result if the fingers come in contact with the injured portion of the fruit. If the skin is whole, i. e., is not ruptured, the spores may germinate, but the fungus perishes on the sufrace unless the resistance of the skin has been weakened by old age or from some other cause.

These facts are well known to many fruit handlers and to those who ship and store fruit. Unfortunately, they are none too carefully applied in the commercial handling of the fruit business. When an unusual loss occurs in fruits in transportation and in storage, the shipper is likely to seek an explanation of the cause of the trouble in factors with which he has no connection or control. As a matter of fact, the most experienced fruit handlers seldom realize the extent of the injury that happens to fruit in the picking and packing operations and from other causes. The most common kinds of injury are caused by stem punctures, finger nail bruises, cuts of various kinds by dropping the fruit in the baskets, on the piles or sorting tables and in the packages, by punctures from nails projecting through the heads and hoops, by injuries from the header, and by the movement of fruit packed loosely. These injuries themselves are not the cause of decay. They make the fruit susceptible to the attacks of some of the common forms of transportation and storage rots. There are enough of these injuries in lots of fruits handled with more than average care to account for a large proportion of the decay that occurs in fruits in transportation and in storage, as we will endeavor to illustrate by a few examples.

Injury in Handling the Apple.

The ordinary soft brown rot in apples in storage can almost always be traced with the naked eye to a mechanical bruise of some kind. It is not often that a lot of apples shows less than 8 to 10 per cent of the fruit with stem punctures, i. e., with the skin of the apple broken by the stem of another as it falls in the basket, on the pile or in the package. There is considerable variation in this type of injury due to the care of the pickers and packers and to the nature of the variety. The Northern Spy, for example, has a tender, thin skin. The stem is rather stiff. The fruit is readily punctured in handling. This suceptibility to injury undoubtetdly accounts for the reputation of the Spy as a questionable keeper. The Northern Spy, however, is one of the longest keeping varieties, if it enters the warehouse with a whole skin. The Ben Davis, on the other hand, has a thick skin, and the more slender stem does not readily puncture the fruit. The Ben Davis may not develop as much decay as the Spy under ordinary methods of handling. The Spy, however, will keep fully as long as the Ben Davis if it is handled carefully.

In addition to stem punctures, there is frequently a further injury of 5 to 10 per cent from cuts, scratches and bruises of various kinds. In a recent investigation of the Bureau in which it was desired to secure 100 boxes of apples free from mechanical blemishes of all kinds, it required the sorting of at least 500 boxes to secure the desired number. Most of the injury in this lot of apples was caused by the pressure of the fingers of the pickers and by rough pouring of the fruit on the piles, the grading tables and into the packages. It is likely that at least 10 per cent of the fruit had the skin ruptured. Most of the injury in this case affected the appearance rather than the keeping quality of the fruit, as the bruises did not break the skin. As this crop was handled by an unusually careful orchardist, the incident is referred to as a means of emphasizing the need of further progress along this line, and to show the extent of mechanical bruising in commercial apple handling.

In the Fruit Storage Investigations of the Bureau large quantities of apples have been handled in which each individual apple has been critically examined for the cause of deterioration. It is a rare exception to find blue mold decay that cannot be traced to mechanical bruising, except late in the season when the fruit has passed through its normal life processes and no longer has the power to resist the attacks of these organisms.

It is necessary in this connection to consider briefly the effect of delaying the storage of the fruit on the development of decay in bruised apples. If the weather is cool, i. e., about 50 degrees at the harvesting time, the molds start slowly into growth. As the temperature is lowered the rate of growth is still further retarded, but this type of rot develops slowly at the lowest temperature in which the fruit can be stored safely, especially if it has started into growth before the fruit is stored. At higher temperatures the growth is rapid, an infected spot often developing as large as a quarter of a dollar in five or six days at a temperature of 70 to 80 degrees. From the practical standpoint, therefore, a delay in storing fruit that has been handled with great care may be followed by premature coloring up and ripening or by development of scald, but with little actual rot, even if the weather is warm. If the picking and the packing are roughly done, the blue mold rots become a prominent feature in the premature deterioration of the fruit. On the other hand, the fruit may be roughly handled, but little rot develops until late in the storage season if it is refrigerated quickly after picking. The decay develops quickly, however, in such fruit when it is removed from storage to a warmer temperature.

There is no need of having blue mold decay in storage apples. Our experience has been that more than 1 or 2 per cent decay except late in the season, is caused, first by handling the fruit roughly and second by delaying the storage in warm weather, provided, of course, the warehouse has been properly managed.

The Effect on the Keeping of the Orange.

During the past year we have had an opportunity of studying the influ-

Continued on Page 193

Deciduous Fruit Culture

BY J. W. MILLS, POMONA, CAL.

FERTILIZERS FOR WALNUT TREES.

The walnut is attracting attention more than ever, and interest in it increases every time there is a report of the prices obtained by the growers. Questions regarding soil and fertilizers, best adapted for the tree are becoming more frequent. Farmers who have poor gravelly soil with water a hundred feet or more from the surface want to know if it is not good walnut land, and if not, what fertilizer is good to use.

It must not be forgotten that the walnut has its limits as regards soil and other adjuncts, as well as the orange. Raising water 75 or 100 feet is expensive and walnut trees do not produce paying crops even in rich and naturally moist land until they are over five years old. Land that requires fertilization from the beginning for walnuts, should be devoted to some other crop. Alfalfa will pay better on such soil where an irrigation head can be raised at a cost of not more than a cent and a half an inch. Deep sandy loam is an ideal soil for walnuts and there are thousands of acres of such soil that is being devoted to grain growing and without water it is better adapted to this than to walnuts.

With such deep rooting trees as the walnut, it is almost imposisble to get some of the ingredients of fertilizing elements to the feeding roots. Analysis, however, shows that nitrogen is the chief element that has to be supplied. The fresh nuts without the hulls, contain about one per cent of nitrogen and .78 of one per cent is ash which means potash, phosphoric acid and other mineral matters which the trees take from the soil. The fresh kernels contain about two per cent. nitrogen and .52 of one per cent. ash. The hulls which are returned to the soil contain about 1.75 per cent ash but only about .15 of one per cent of nitrogen. There is little use of applying phosphate fertilizers to walnut trees except in conjunction with green manuring crops. When phosphates are present in the soil but in the absence of humus, very little benefit can be derived from them. It must be borne in mind that over half of the available potash, and phosphoric acid is found in the humus of the soil. It is the humic acid that keeps the phosphates available. It counteracts the action of the lime which reverts the available phosphates into the same material as bone. As nitrogen would in all probability be the only element necessary to supply, green-manuring should be the only means employed. A light dressing of potash and phosphate would help to produce an abundant crop of this which would in combination give all that is required in the line of fertilization of walnuts. However, the analyses that the nuts and hulls show would indicate that as far as they are concerned, with moderately rich ground, no commercial fertilizers are necessary as long as green-manuring is practiced.

Walnut trees are particularly well adapted to growing green crops beneath them. The trees being bare of leaves during the winter makes it possible to grow crops close under the branches. We would suggest that seed for such crops be sown just after the last irrigation before harvest. The young plants will get some tramping but not enough to seriously hurt them. Furrowing out for irrigation can be delayed till after the crop of nuts is gathered.

It is nearly impossible for growers to use native plants, the seed of which is not on the market, excepting with such burr-clover which comes in sheep manure. The habits of vetches are quite different from most other green-manuring plants, in that they develop a wonderful root growth during the winter months with a very poor showing of a top. About the middle of February the top growth commences and pushes forward with a rapid growth that is much more satisfactory than any other crop that we know of. It is very rich in nitrogen and is more easily handled than peas or lupins. It grows in a tangled succulent mass that is easily cut with a rolling cutter. Its succulency makes it rot quickly which is desirable.

* * *

TRIMMING THE GRAPE ARBOR.

The matter of trimming the grape arbor is an important one and each class of grape should have its pruning conform with its habit of bearing, still there are arbors that are never pruned properly. There are always some persons who fail to get crops of some of their favorite varieties of eastern grapes and attribute it to the soil or climate. We know of an arbor near Claremont, over which are trained three Concord and three Niagara vines which have been scientifically pruned ever since they were planted. They were heavily fertilized to begin with, which of course, was a prominent factor in their productiveness. These six vines have produced as much as 700 pounds of grapes in one season, they had this record before they were four years old. The system followed was to leave long fruiting canes with spurs at the bases for renewal, according to rules frequently given in the Cultivator. All eastern varieties of grapes produce best from growth starting from long canes. They have grown and borne fruit so long on this plan that it is better to allow them to follow their inclination. We have noticed numerous arbors of these varieties that have been pruned back to the old stems; others have been pruned long without any spurs having been left. Either of these plans are undesirable. Apply the long pruning method to your arbor grapes of eastern varieties.

Such grapes as Muscat, Tokay, etc., should be pruned to spurs of two buds each after the main leaders have been trained over the frame work. Do not fail to leave spurs to grow low down on the main stems if you desire that the arbor give shade clear to the ground. Removing sprouts from positions where they are not needed helps to improve the utility of the arbor.

* * *

GRAPES, GREENS and LOQUATS.

Editor Cultivator: Please advise me what is the best grape to grow for commercial purposes in Orange county near the coast, on heavy land. Must be disease resistant. What loquat should I plant, conditions same as above?

What green crop shall I grow from January to July to plow down for bulk for its mechanical effect. The peas and vetches tried here do not grow

Continued on Page 162

Armstrong Nurseries

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Everything for the orchard and garden. Grown by experts, hence reliable and sure to grow. We pack all shipments so carefully that they are sure to reach destination in prime condition. Our finely illustrated catalogue tells all about them; a copy is yours for a two-cent stamp.

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Six varieties for Silk Producing and Fruit Berries. Special attention is called to the Morus Nigra, a Persian variety especially for fruit. Also to the Japanese Mulberry, a variety generally used for silk culture.

I am also prepared this year to furnish 10,000 Rooted Grape Vines, following varieties: Flaming Tokay, Black Malvoise, Black Prince, Cornichon, Sable Kanski and Muscat. I have also some very fine Orange Quince Trees and Pomegranates. Send for descriptive circular free by mail.

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Choice line of Orange Trees, consisting of Valencia Late, Wash. Navel, Navelencia, King Tangerine. Eureka Lemon, Budded Loquat, Blue Gums, Red and Sugar Gums, large stock Soft Shell Walnut trees 3 years old, Grafted Walnuts, Palms, Shrubbery, and general line of deciduous fruit trees. Write for price list.

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Practical Farm Science

HONEY.

Honey consists of the nectar of flowers elaborated by the bee and laid down in the cells of the honey comb. This is in substance the definition given in the dictionaries and recognized by writers on food products and food adulterations.

It is not uncommon practice to feed bees, when flowers are scarce, with sugar in some form to carry them along till they can get a full supply of nectar from flowers. But in order to lessen the work of the hive and so increase production, cane sugar is sometimes fed abundantly and continuously when it is not at all essential to the bees.

This cane sugar, more or less converted by the bees into invert sugar, is laid down in the comb; but according to the definition given above is not, strictly speaking, true honey—Prof. A. W. Ogden.

PROTECT THE BIRDS.

The protection of birds is fast passing beyond the stage of mere sentiment. The lover of the gun has for years had, in a great measure, the supervision of the game laws, which furnish some protection to the smaller birds, but almost none to those which are considerable edible or decorative enough to be of use to the milliner.

Among refined and humane women the Audubon and similar clubs have done much to change the sentiment in regard to the use of the skin and wings of birds as personal adornment. Some years ago I made the statement, which I have seen no occasion to retract, that "I have rarely seen a refined, cultivated face under a hat which showed that bird life had been sacrificed for its decoration."

The methods to be used in restoring to the fields, woods and towns the number of birds of former years is a task of no mean undertaking. In reframing the laws we can depend upon little or no assistance from the sellers of powder and shot, the pot-hunters or the boy with the sling-shot or his parents, or even from the true sportsman, who, as a rule, is fully as willing to see the farmer's crop shortened a little as to curtail his own pleasure.

Societies should direct their attention to disseminating information through papers to the farmers, who, though they receive the greatest financial benefits through the insectivorous and granivirous birds, are often uninformed as to their full value, who will wantonly shoot the birds in their cherry trees which have done much to save their other crops.—Dr. J. F. Bancroft.

POISON FOR GOPHERS.

Dissolve 3-4 ounce of strychnine crystals in 1-2 pint of hot vinegar, and after the strychnine has dissolved add one quart of hot water. Take 10 lbs. of clean wheat and pour the poison solution over it, stirring frequently so that all of the wheat will be poisoned equally. When the poison water is all absorbed pour the wheat out on paper in a room where nothing can get at it and stir two or three times a day until dry.

Next dissolve three pounds of sugar in 1-2 gallon of water and boil until a thick syrup is made. Pour over the poisoned wheat while hot and stir until cold. You will then have highly poisoned wheat that is sugar coated. When ready to use take as much of the wheat as will be used within a week and pour a rew drops of Anise oil in it. This will make an attractive odor and the gophers will come to it from a distance, but as the Anise oil is volatile it is best to prepare only a small quantity at a time.

It is best to put about 1-4 to 1-2 teaspoonful of the wheat in the runway, but if put in the ground close the runway the gopher will find it. It sometimes happens that the gopher will carry the wheat to his store but he usually eats it within a few days, if not at once.

Great care should be taken in handling such wheat. It should be kept in some place where there is no danger of birds or animals getting it, and in a tight can.—J. B. Neff.

THE METRIC SYSTEM.

A very prominent seed dealer says: "In our business we deal directly with the farmer and study his needs and wishes. I wish every farmer in the United States could have it brought home to him that the adoption of the metric system would save him not only endless confusion and vexation, but would also prevent his purchasing what he thinks is one thing but which very often turns out to be something entirely different. The widely different State laws as to what constitutes a legal bushel of seed make it possible for the unscrupulous dealer to take advantage of the purchasers.

"In Pennsylvania the legal weight of a bushel of grass seed is fourteen pounds. We pick out the chaff and dead germs from our grass seed, and as a result the actual weight of our bushel is from thirty-eight to forty pounds. All this has to be carefully explained in our catalogue to account for the difference in price of a bushel between our seed and that sold by dealers who do not take out the chaff.

"As another example take onion sets. We sell what we call a 'heaping bushel' of from thirty-eight to forty pounds, whereas the farmer ordering his onion sets from the West or South will receive as low as twenty-three pounds to the bushel for his money. There is such an utter confusion owing to the different legal standards in different States for the same thing that the farmer in buying his seed from various places has hard work to form any idea of what he is going to get. We have tried to remedy the matter in our own catalougue by quoting prices in pounds. If the metric system were introduced, however, the farmer could be sure of getting the same quantity wherever he ordered, for the standard would be the same throughout the United States.

"We sell twenty-three kinds of grass and grain seed and the weight varies from seven to thirty-two pounds per bushel. You can see how confusing the matter is. We are earnest advocates of the metric system and are immensely pleased to see the matter taken up by the press.

"The fact that half a kilo so nearly approximates the pound will make it an easy matter for the farmer to get comparative weights of the old and new systems.

"We have found the farmer of today ready to adopt any new method that will help him in his work and we feel sure that once he sees the advantage of the metric system he will throw his influence toward the adoption of 'one weight, one system' thro'-out the United States."

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Over fourteen years of careful experimenting with the growth of the Smyrna fig, or fig of commence, in this country were required before we could say that we had been entirely successful in propagating this valuable fig, and for the past five years we have been growing this fig in its perfection, drying, packing and marketing it.

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There are several varieties of the Smyrna fig, but with our varied experience in this line we feel warranted in recommending one, the Calimyrna, as the most profitable and best for all commercial purposes. We are able to supply almost any desired quantity of these superior trees.

We protect the Calimyrna Fig with the seal shown herewith, which is attached to each bundle of ten trees.

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These trees are all grown in our nursery plant, No. 3, which has a rich river bottom soil, permitting the most perfect rooting . Our

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LIMES,
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And all of our citrus fruit trees are grown in our nursery at Exeter, which has a deep, rich, black loam and is particularly suited to citrus trees. All of the standard varieties will be found in our stock.

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As we are the largest growers on the coast of the best varieties of raisin, wine and table grapes and also make a specialty of vines grafted on phylloxera resistant roots, we are in a position to fill your orders most satisfactorily.

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Our catalogue, in either English or Spanish, is profusely illustrated and gives a good idea of the immensity of our stock. We mail it free to any address on receipt of 5c postage. Price list mailed on application.

BOOK YOUR ORDERS NOW

If you are contemplating doing any planting it would be well for you to place your order as early as possible. We will book your order now and ship your stock when it is desired.

Paid-Up Capital, $200,000.00.

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(INCORPORATED)
GEO. C. ROEDING, President and Manager
FRESNO, CALIFORNIA

California Horticulturally

BY JOHN ISAAC, SACRAMENTO, CAL.

DECIDUOUS FRUIT PROSPECTS

An inspection of the many orchards in the northern counties indicates a good chance for the coming fruit crop. The blossom buds are rapidly maturing and are well swollen already. In most cases these are well filled out and give every evidence of an abundant crop, barring of course, unforeseen contingencies. Apricots alone will probably be light. Of this fruit there was a heavy crop last year, and we rarely have two good crops of apricots in succession. Very much damage has been done, too, by shot-hole fungus, which in many cases has weakened the trees and so lessened their bearing capacity. Last year there was a great shortage in the peach crop. This was due to some unknown cause, although the theory was advanced that heavy rains during the blooming period had washed the pollen from the blossoms and prevented proper fertilization. The trees blossomed well but the fruit did not set, and in many cases the blossom buds shrivelled up and failed to mature. This year, there is every evidence of a strong blossom season, to be followed by a heavy crop. The same is true of pears, and while the blight has done much damage with this fruit, there is still a sufficient quantity of pear orchards left uninjured to insure a very heavy crop in a good season, and such this promises to be. With the exception of the apricot, as noted, all other deciduous fruits so far promise well, and if the unforeseen does not happen, we shall have a very bounteous crop of deciduous fruits this season.

* * *

NO VINE QUARANTINE FOR TULARE COUNTY.

The vineyardists of Tulare County are very much worked up over the possible danger of introducing the Anaheim disease and Phylloxera into that county, from both of which it is now fortunately free. To protect themselves, the supervisors at the request of the vinegrowers, passed an ordinance prohibiting the importation of grapevines into the county from any section whatever. This has been pronounced unconstitutional by the Attorney General. A petition, very numerously signed, and expressing the general opinion and wishes of the people, was then prepared and presented to State Horticultural Commissioner Cooper, asking that he declare Tulare county a horticultural quarantine district, into which no grape vine cuttings could be admitted. The matter was again laid before the Attorney General, with the view to discovering whether, under the law, the Commissioner could do as requested, and the necessity for such action and the urgency of the case were explained. In response a somewhat lengthy opinion was rendered, giving many authorities and quoting law points in relation to the matter, the whole opinion being summed up as follows:

"The act defining your power does not seem to authorize anything more than a circumscribing of an infected district, and the eradication of the pests therein. But without deciding as to the full extent of your powers thereunder, such a regulation as that contemplated by the petition signed by the citizens of Tulare county would seem to violate the principles laid down in the above case.

In answering your communication therefore, I advise you that a regulation prohibiting the importations of vines from other sections of the State, whether the same be infected or free from infectation, into the said county of Tulare, would be unreasonable, and it would be necessary for you to designate the section in which infestation prevails, and prohibit the exportation of vines, tree, or plants, exposed to such infestation from such section."

* * *

AN ERRONEOUS STATEMENT.

The Santa Barbara Independent says:

"County Horticultural Commissioner L. T. Yates, in the course of his inspection of fruit that has been shipped into this city and county during the past few weeks, has discovered that many of the consignments of oranges have been affected by the Mexican orange maggot, which has been a source of much annoyance to growers and those who have been handling the fruit for a long time past. Although a quarantine has been established against the importation of infected oranges from Mexico, Commissioner Yates states that large quantities of the infected fruit have been shipped into California and that it has been quite generally distributed in the market in the southern section of the state in spite of the precautions that have been taken to enforce the quarantine regulations."

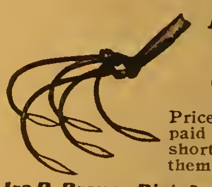
It is to be regretted that such statements as this find their way to print, as they are misleading and tend to arouse the fears of our fruit growers, when there is no necessity for it at all. We question very much whether a single Mexican orange has ever found its way into Santa Barbara. No Mexican oranges get into California without inspection, and inspection means destruction, as most or all of them come from the state of Guerrero in which the orange worm is known to exist. The Mexican orange maggot has never yet obtained a foothold in California, and it is safe to say that with the present system of inspection and quarantine, it never will, and Commissioner Yates is laboring under a great mistake in connection with his alleged discovery.

* * *

CODLING MOTH TIME.

In a very short time the apple trees will be in bloom and already orchardists in the apple sections are looking up their spraying outfits, preparing for the annual contest against the Codling Moth, and it is certain that good work must be done, if the grower would have any results for his labors. Often orchardists make the mistake of purchasing cheap materials and then wonder that the results are not more favorable. We know of no falser form of economy than the purchase of cheap Paris green for a campaign against the moth. The amount of the article used is very small, one lb. to two hundred gallons of water, so that a few cents saved on a lb. of Paris green is infinitesimal, while the waste, from this poor economy is very heavy, often the entire crop. So, before preparing the spray, every possible method should be used to ascertain that the Paris green comes up to the standard, and it should be purchased with the guarantee of some reputable house. It would be well to purchase the necessary amount early enough to have it tested, and this can be done by sending samples to the University at Berkeley. A few cents extra and a little trouble taken beforehand, may mean the difference between a crop of fruit and the loss of a year's labor and outlay.

The Earl Fruit Company recently sent a carload of apples to France, and the prices realized which are very satisfactory, are as follows: Four-tiers, $2.40 to $2.65; four and a half tiers, $1.92.



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With the Citrus Growers

BY J. W. MILLS

NEW THEORIES IN IRRIGATION.

Should the orange growers of Southern California go back to the old way of irrigating that was in vogue in most of the orange growing districts eight or ten years ago, there would not be much more than half enough water to keep the trees now under cultivation, on a growing basis. The furrow system has saved the orange growers not only water but expense in cultivation. There is one orchard of 700 acres in Riverside that has been pulled through with one inch to fifty acres for two or three years past. It is true that some of the orange trees are young, yet this is offset by two hundred or more acres being in full bearing lemon trees. The area this year was increased by over one hundred acres with no increase in the water supply. Had this orchard been irrigated by the old system of flooding the area could not have been increased but it would have been cut down considerable. The orchard wihch we refer to is part of the Arlington Heights property.

The superintendent of this large orchard has a new theory which he works in connection with the furrow system of irrigation. The object aimed at is to put the water down below the zone in which the roots naturally grow and keep that zone as dry as possible. This is to discourage the formation of roots near the surface. Mr. James Mills, the superintendent, claims that by running furrows close to the trees, the soil in the centers of the spaces running parallel with furrows, contains more moisture two feet below the surface when the next irrigation comes around, than does the soil near the trees. This being the case, there must be side percolation to a remarkable degree. There is one 20 acre tract of two year old trees which went through last summer with one irrigation. The trees made a splendid growth and some of them produced a few oranges. This however, is not so remarkable as was the case with orange trees of the same age at Pomona Station. These went through the entire year from the fall till the present time with not even one irrigation. Some of the trees have half of a loose box of oranges of fine quality. These trees were planted after the Reed system and irrigated after planting, in furrows. During the coming years, as the soil fills up with roots, the supply of water will have to be increased. Here is where we have to look for economy in the use of water and this is what has incited experimentation with new theories. The same theories will not work in different kinds of soils and here is where we can't judge by what our neighbor does, just what we should do. We know from experience that on most soils and on all which we have handled, that side percolation is not very active. It is most active on heavy soil. We fear that even if the practice of running water in furrows near to the trees, is practiced from the planting of the orchard, that as the trees get older, there will have to be an addition to the number of furrows. We have a theory, backed by experience that side percolation will be rapid enough when the feeding roots fill the soil.

IMPROVED CONDITION OF FRUIT GROWERS.

It was pleasant to note, at the late Fruit Growers' convention, the evidences of a better feeling in regard to the future of fruit growing in California. For several years past there has been quite a pessimistic feeling prevalent, at least among some of the members, and advice has been given to root up the fruit trees—usually the other fellow's—or at least to discourage further planting. This year while there was no advocacy of extended planting of new orchards, there was generally a hopeful feeling as to the future of the fruit industry in our state. This was undoubtedly due to the fact that extraordinary good prices have prevailed for orchard products this season and fruit men have done well, in spite of a shortage in many varieties.

AGRICULTURAL EDUCATION.

The intelligent prosecution of agriculture is essential to the very existence of civilized man, and especially important to the people of the United States. The great mass of Americans have no chance to learn the art of farming in a practical way, and great ignorance prevails, even in the rural districts, as to the best mode of cultivation to hold fertility in new soils and to restore the exhausted lands in older settled states, which ignorance is the cause of great financial loss and is leading to the abandonment of country life by thousands of our people and the return of primitive conditions over extensive regions, much to the loss of the nation in many ways; therefore, to give all American youths opportunity for practical training in agriculture, such studies should be taken up in the common schools, especially in rural districts.

Every thinking person approves the movement to extend and to systematize industrial education. It especially urges that practical training schools of agriculture and the simple mechanic arts be established among the rural population, so that every child shall be trained to love nature and to make the most of its resources for self-support and the upbuilding of model American homes. With such a system of rural education, the forests of the land would be restored and preserved, and a body of youths trained for citizenship that would make the progress and prosperity of the republic forever secure.

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I have some 50,000 fine seed bed stock for sale. These plants are good color and very thrifty. Absolutely clean and healthy in every way. I will make them caliper 3-16 of an inch and up to ⅜ or ½ inch. Owing to the large size of the plants the packing will necessarily bring the price above the ordinary price of common sized plants, but they will be sold cheap, and if you intend setting it will pay you to see this stock.

J. M. Baker - - - Glendora, Cal.

The Ornamental Garden

BY ERNEST BRAUNTON, LOS ANGELES, CAL.

AN EVERBLOOMING IRIS.

There is, around Los Angeles in limited quantities, an iris of the Germanica type that seems to be an everbloomer. Iris Germanica has been so crossed and re-crossed with other species that except for well known characters still present we might suspect some of the types of belonging to a distinct species.

Just at present other species and varieties are out of bloom, but this particular one is still throwing up large, healthy flower spikes covered with florets of a deep rich purple. Even the recent cold snap seemed in no wise to affect this persistent variety. It is a vigorous grower with long flower spikes making it very desirable for cutting. Our attention was first called to this everblooming type during the Los Angeles Flower show in November and we now have a bunch of blooms from the same plants sent in by a Moneta subscriber. It is remarkable to find an everblooming iris, but more particularly one that blossoms through our recent cold snap.

EUCALYPTUS FOR HIGHWAYS.

A most important family are the Eucalyptus; few of these are suited for street planting in cities, but for country roadsides they are especially good. Of those thoroughly tested, are Eucalyptus polyanthemos, blooming in winter with long pendant blossoms recalling mignonette, is one of the best.

Eucalyptus callophylla and E. ficifolia are fall bloomers, and E. [illegible]eroxlon var. pallida with beautiful crimson flowers blooms from January to April, and has a weeping silvery foliage. Individual specimens of E. corymbosa in full bloom make a sight not easily forgotten, and may prove useful for avenues. Many others such as E. cornuta, E. diversi-color, E. leucoxylon are well suited for country roads. E. microcorys is highly recommended in Australia and from the description and habit of growth, is one of the few kinds worthy of a place on the lawn as a specimen tree.

CHARM OF COUNTRY LIFE.

There is no place in the world which appeals so irresistibly to people of all kinds, at this season of the year especially, as a pretty well-kept country home. It need no longer be handicapped by the old time drawbacks. The rural free delivery brings the mail daily to the door, and there are so many other conveniences that the farmer of ten years ago did not have, that farm life is no longer the drudgery it used to be, but more of a pleasure.—F.

CANNAS.

Some do not succeed with Cannas as they think they ought, and it is all because they fail to observe some essential matters. To do their best, Cannas must have a light, deep and very rich soil. We have seen them at their very best in old, well-rotted manure piles; but they must have plenty of water; sprinkling them does no good. When you go to water the Canna bed, give it a soaking a foot deep or more, and do it once or twice a week in dry weather. Try this and see if your Cannas don't improve.

PLEASURES OF COUNTRY LIFE

In this age of hurry and worry, of hustle, bustle, rush and push, the concentrated energy of the average American is kept on the alert, in the great struggle for bread and butter with most of mankind and for gain for the big, round, shining dollars with others.

The desire to be able to give our children a fair education and to secure for ourselves a competency when no longer able to work, makes a just use of our energies commendable. But "all work and no play makes Jack a dull boy.," and we do not note the beauty of all about us.

But what are some of the pleasures of life in the country? Our lives do not appeal so strongly to the sympathy of our city cousins as they did a few years ago when we were forced into a state of isolation by reason of circumstances beyond our control. Today, with the daily newspaper delivered at our door that keeps us in touch with the whole world, and the telephone that makes it possible to be social with our neighbors, and in communication with the markets and business world generally, we are becoming so independent that we have no use for their sympathy and concern for our welfare.

First, and above all we have an abundance of pure air which ought to keep us in such health as will enable us to enjoy all of its pleasures which makes the real joy of living. Not that we are never sick, nor ever have headaches or backache, nor suffering any of the "ills that flesh is [illegible]" but with this chief blessing—heir to all kinds in its most perfect condition, and freedom from the excitement and confusion of the city, it is usually our fault if we do not have a fair degree of health, without which there is little pleasure in life anywhere.

Society in the country is not altogether free from evils, yet every true parent must take great pleasure in being able, to a great extent, to prevent outside influences from counteracting home instruction until the habits and characters of the children are so well fixed that there is less danger of contamination when they must go out for themselves.

If you are so fortunate as to have a home on the mesa, against the foothills, or in a canyon, and have a spark of love for the beautiful, your heart must be touched with the profusion of beauty in nature's great garden, from the time the first delicate flower of winter appears until the latest summer visitor has gone.

The great ocean of waving grain and grass with its countless shades and tints of colors, makes your fingers tingle with the desire to wield the artist's brush and send a copy of it to your city friends.

And what a pleasure to see your children run and romp unfettered by fashion's toggery, laugh and sing and shout, and so develop the muscles, strengthen the lungs, and build up a constitution that can bear the discipline and study of school without injury and take hold of work with zeal.

ELEPHANTS EARS.

Everybody is familiar with the Caladium (elephant's ear) as a foliage plant, but few have ever seen it in bloom. A magnificient variety has been introduced from Central America which is a fine bloomer. The flowers are shaped like those of the calla lily, and are from seven to eight inches long and about the same width. It is a little late to start it now, but we have seen grand plants from bulbs that were put out in the middle of June It must have rich soil and plenty of water.

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Gray's Gardena Dewberry
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In the Vegetable Garden

BY ERNEST BRAUNTON

CHILLI PEPPERS.

There are several varieties of chilli peppers, but only two are grown commercially in California. One of these, the bright red, called "The Long Red" having pods from six to ten inches long and pointed, is the best known, while the very dark cone-shaped chilli usually known as the Mexican chilii, is not so commonly grown.

Chillis are most successfully grown in rich sandy loam which does not form a crust after water has been run over it, but it is not best to grow chillis more than two years in succession even on the best of soils without fertilizing or plowing in a cover crop. The chilli roots are shallow feeders and draw heavily on the plant food near the surface.

Great care should be taken in selecting seed so as to have as few nonproducing plants as possible, as well as to have the most profitable plants.

The seed should be taken from that part of the field producing the best and earliest ripening plants.

The best location for seed beds is on sandy ground, as this warms earlier in the spring and there is less liability of "damping off" of the plants if there should be an excess of moisture. The seed may be sown in the last week of February in beds that can be protected from frost, as the chilli plant is very sensitive to cold. Seed enough may be put on so as to have about four seeds to the square inch, rake in lightly and then cover with about a quarter of an inch of damp sand which should be kept damp until the plants are well up. After this it is best to put on water enough only to keep the plants in a thrifty condition until they are about two and a half inches high when they may be transplanted to the field.

If "damping off" should begin to show in the seed bed, all the infected plants as well as those within an inch of them should be carefully taken out with a trowel and thrown away. It is best to select a new location for the seed bed each year.

Plow the ground deeply where the chillis are to be planted and harrow down well. Then have a common sled marker which will mark three rows at a time four and one-half feet apart. Plant three feet apart in the rows, making the earth firm around the young plants. If the ground is not thoroughly wet it is best to irrigate before planting.

Planting should be done as soon as danger of frost is past.

The cultivation should be with a view to make a ridge of earth, having the chilli plants in the center. This makes a convenient furrow for irrigating and keeps the water from standing around the plants, as standing water injures them.

Chillis being shallow rooted require water at frequent intervals after they begin to bloom and it is often necessary to run a small stream down the rows every ten days. Some kind of cultivating should be done after each irrigation until the plants are too large to allow a cultivator to pass between the rows. Chillis grow best when there are clear warm days and warm nights.

If the chillis are intended for drying the picking is not done until the chilli is all red, any green spots will be white when dried. If the chillis are wanted for canning they are picked while of a dark green color. The usual manner of drying is by running a twine through the stems and hanging in the air on a scaffold, but in damp districts the chillis have to be dried in specially made evaporators.

As much as 2400 pounds of chillis have been grown per acre, but 1000 pounds per acre is nearer the average crop. It will take about seven lbs. of red chilli to make a pound of the dried product.

The consumption of dried chillis seems to be on the increase and there is an increasing demand for green chillis from the canners. Chillis can be grown for about 7 1-2 cents per dried pound on good land where water is not expensive.—J. B. Neff, Anaheim.

POISONOUS FUNGI.

The poisonous effects of fungi are of two kinds: The irritant, which affect the stomach and digestive organs directly and show their effects soon after eating; and the narcotic, much more dangerous, which act upon the nervous centers and do not produce poisonous symptoms until after a number of hours, usually eight or ten. The irritant fungi are often recognized by their taste when raw, but the narcotic species are generally pleasant to the taste, or at least not disagreeable.

The following rules should not be neglected by the beginner:

(1) Avoid fungi when in the button or unexpanded stage; also those in which the flesh has begun to decay, even if only slightly.

(2) Avoid all fungi which have stalks with a swollen base surrounded by a sac-like or scaly envelope, especially if the gills are white.

(3) Avoid all fungi having a milky juice, unless the milk is reddish.

(4) Avoid fungi in which the cap, or pileus, is thin in proportion to the gills, and in which the gills are nearly all of equal length, especially if the pileus is bright colored.

(5) Avoid all tube-bearing fungi in which the the flesh changes color when cut or broken or where the mouths of the tubes are reddish, and in the case of other tube-bearing fungi experiment with caution.

(6) Fungi which have a sort of spider web or flocculent ring around the upper part of the stalk should in general be avoided.

THE FARM GARDEN

The farm garden probably pays better than any other land on the place. No figures have been collected to show of what value its products are, but in the census of 1890 full statistics for market gardens were obtained and from these the conclusion just stated may be argued. The average value of garden stuff to the acre was found to be $147.17, while for wheat the average was only $11.65. Later reports show that the average for wheat, corn, oats, and hay is $7.75 per acre. It seems clear, therefore, that market gardening is more profitable than farming. But the home garden must pay even better than the market garden, for it is not subject to the heavy losses incident to marketing perishable crops. Its products are used directly on the home table and there need be very little waste. It follows that the garden pays better than the field. A good garden will supply half the family's living, and when field crops show a balance on the wrong side it becomes a very important means of support.

TEXAN ONION TEST.

In the yield test of irrigated and unirrigated onions in Texas it was found that the actual cost of four irrigations given during the season was $11.50 per acre, and that the increased yield amounted to 18,820 lbs, over that of the unirrigated field. The yield of the irrigated plat was at the rate of 38,560 (or 676 bu.) per acre. In a test of nineteen varieties of onions, the Red Bermuda proved the most satisfactory and productive.

Vegetables, when well cooked, will be found substantial aids to health. With our nuts, fruit and vegetables we do not need strong meats, and the physicians are awakening none too soon to the necessity of advising rheumatic people to abolish the meat course and adopt that which is more congenial to our mild, and of itself, revitalizing climate, the fruit, nut and vegetable diet.

Strawberries Dewberries
Brandywine Strawberries, Kellogg's strain, Gray's Gardena Dewberries. First-class plants at low prices. **C. T. Stanfield, R. F. D. 6, Los Angeles, Cal.**

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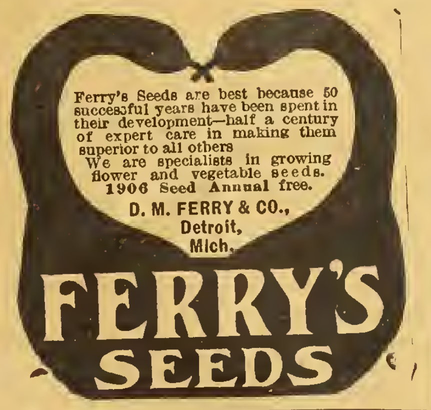
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The main crop has no seeds. Very early, extra large and very prolific.
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(TROPICO BEAUTY)
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Agent Armour Fertilizer Works
(Factory at Colton)
Phones: Main 7682 Home 6117
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Caustic Soda 60%, 70%, 74% 76%, 78%, 99%. Powdered and Solid. Full information cheerfully given. All goods gnaranteed.
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Burbank's Crimson Winter Rhubarb Our Specialty
$1.50 per dozen, $7.50 per 100, $50 per 1000
Citrus Trees for wholesale and retail trade, also full line of **Deciduous** and **Ornamental Stock.**
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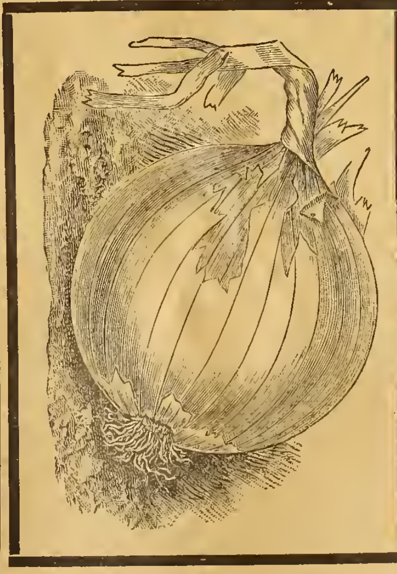
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Also ***Alfalfa*** and all kinds of farm and field seeds.
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CALIFORNIA CULTIVATOR

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Public Abuses Must Cease.—In the business world a general reckoning is going on. Our country is new and many evils have grown up. Graft has been practically universal. The business world is doing much toward doing its own cleaning, but the president is pushing things along in an official sense. He is setting the example. No other man in the United States is so well fitted for the work the president is doing. It is almost providential that he is in charge at the present time. There is graft in the insurance world—in fact, wherever the business field is plowed, something is turned over that is in need of daylight. In the minor walks of business, owners and managers have eliminated graft. They have required their employes to be honest. Now the public is going to require that general honesty shall be extended to include those who are in charge of the business. It was a good thing to make the subordinate honest, and it will be a good thing to make the boss honest. For a long time railroad managers have exacted the most punctilious honesty from their subordinates. Nothing remains now but to cut off the graft higher up.

Private cars, refrigerator cars, stub roads and rebates (incidental to these stub roads) must go. Common sense has willed it and the public conscience requires it. Above all things discrimination must be discontinued and good service given.

Congress and the president have these matters in hand and the right thing will be done. There never has been any doubt about the result. The railroads have been more scared than hurt. After it is all over they will be glad that congress has taken action. No laws have ever been made to control railroads that have not, in the end proved to be the best thing for the property. The sooner railroading is made a legitimate business the better. This country is new and it will take some time for the vast business of railroading to be divested of all possibility of abuse. After the railroads are regulated, some attention must be given to regulating the commerce upon our rivers and lakes—now entirely unregulated. And after that will come the regulation of ocean steamship lines, in the management of which outrageous abuses are now practiced. The public should not weary of well doing until all abuses of the business world are remedied, so far as it is possible to do so by legislation.

It is undoubtedly true that the first important act to be adopted by congress, now in session, will be an act cutting off railroad abuses, prohibiting rebates, and making discriminations impossible. The Cultivator hopes that such will be the first act of the present congress.

Business is generally upon a cleaner and healthier basis in the United States.

* * *

The Walnut Industry—The growing of the English (rightly Persian) walnut bids fair to become one of the leading industries of the Pacific Coast. For a few years prices have been steadily advancing until during the season just past the walnut has proven to be one of our most profitable orchard crops; and this, too, in a year when our citrus fruits have brought prices little short of phenominal.

Doubtless, the same mistakes will be made as has been the case with all our fruit trees, more especially the olive and those of the citrus family; much land will be planted to walnuts that is totally unfitted to the purpose. The walnut industry has thus far been confined to Southern California and particularly to that portion known as the "fog belt." The English walnut seems to thrive best where not entirely removed from coast influences so that the greatest measure of success has been attained in those districts subject, at times, to foggy weather, and sufficiently warm and free from frost that no injury results from late spring frosts during the period when the walnut is in bloom.

As we go further north, into regions of colder or more frosty winters, the grower will doubtless do well to shun the standard sorts so universally planted in the south and confine himself to the French varieties, particularly those known as "late bloomers." Many cases are known, both in California and Oregon where walnut trees have made a wonderful growth, but have each year been rendered barren by severe frosts at blossoming time. There is no doubt that with careful selection, not only many parts of Northern California, but also in Oregon walnut-growing may become a profitable industry. Of late years the observant growers have become converts to the use of trees grafted on native walnut root. As before noted, the high and increasing prices have caused quite a boom in planting throughout this State.

* * *

Passing of McClatchie.—In the death of Prof. Alfred James McClatchie, which occurred in Los Angeles on the 11th inst., the people of the Southwest lost one of their best instructors in scientific horticulture. All that he wrote contained his best effort and among scientists he was known to be careful, painstaking, conservative, and the mistakes he made were fewer than generally falls to the lot of one who writes voluminously on technical subjects.

His was a keenly analytical mind;he was ever the scientist, and was able to give to the world a considerable mass of standard scientific literature in a comparatively short time. His writings consist of large numbers of press articles, many of which first appeared in the Cultivator, bulletins for the Arizona and California Agricultural Experiment Stations, and for the Department at Washington. Of the latter his best known and most comprehensive work was "Eucalypts Cultivated in the United States." In addition he published many bulletins in Southern California through the local Academy of Sciences, among them being "Flora of Pasadena and Vicinity," "Seedless Plants of Southern California," etc., etc.

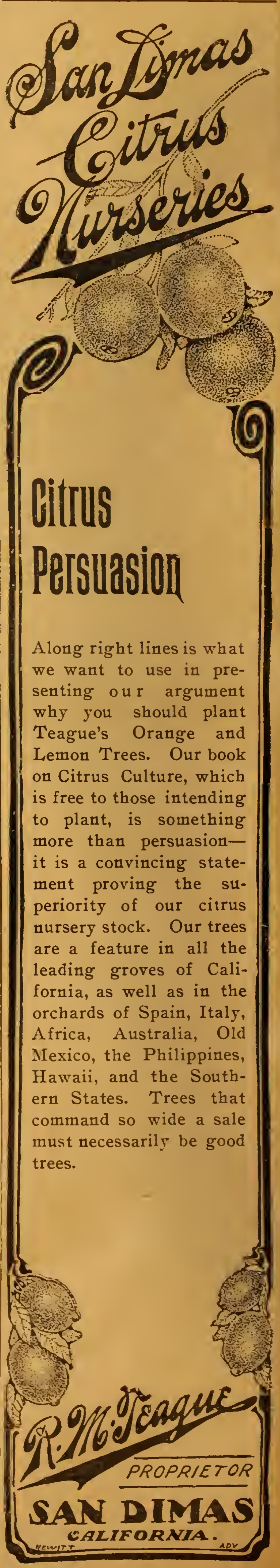
He was of a quiet, unassuming nature, rather inclined to shun the stranger, but to those who knew him best he was, at all times, a pleasing and interesting companion. It has been the good fortune of the writer to have met and visited with him many times and he was ever willing to give information and advice along scientific lines. The last visit made him, at his late home in Montebello, even when the hand of the Great White Plague was heavy upon him, found him cheerful and hopeful for the future. He will be more missed in scientific circles than any scientist ever in this section of the country and leaves, besides a wife and child, a host of friends to mourn his loss. His works will prove an enduring monument to a life of close application to scientific study and research.—Ernest Braunton.

* * *

The New State.—In the movement to divide Indian Territory considerable interest centers around the new state that will be formed. The name most likely to be chosen will be Sequoyah, in memory of the original possessors of the country. The capital will most likely be Fort Gibson as it is easy of access on the Grand River near the boundary line of the Cheroke county. Fort Gibson is the oldest town in the Territory, the government having established a military fort there in 1818.

There is a little interesting history about this place when the military post was in operation.

Among the officers who commanded there was Zachary Taylor who was afterwards President and Jefferson Davis who became President of the Confederate States. When Davis was a lieutenant he eloped with Miss Betty Taylor the daughter of the redoubtable General and they lived in a double log house which though in ruins is still shown. Henry M. Stanley the African explorer, taught school in a building which is pointed out as one of the land marks. Gen. Hazen, while residing there married Miss McLean who a few years later became the wife of Admiral Dewey. Washington Irving wrote his "Tales of a Traveler" while spending some time in the place, and in 1848 Henry W. Longfellow was so delighted with the scenery in the neighborhood, that he immortalized it in his "Evangeline."



San Dimas Citrus Nurseries

Citrus Persuasion

Along right lines is what we want to use in presenting our argument why you should plant Teague's Orange and Lemon Trees. Our book on Citrus Culture, which is free to those intending to plant, is something more than persuasion—it is a convincing statement proving the superiority of our citrus nursery stock. Our trees are a feature in all the leading groves of California, as well as in the orchards of Spain, Italy, Africa, Australia, Old Mexico, the Philippines, Hawaii, and the Southern States. Trees that command so wide a sale must necessarily be good trees.

R. M. Teague
PROPRIETOR
SAN DIMAS
CALIFORNIA.

NEWS OF COUNTRY LIFE IN THE GOLDEN WEST

HORTICULTURE.

The 14th annual citrus fair at Cloverdale will open on Tuesday, Feb. 20th, and will close on Saturday, Feb. 24th.

Redlands has shipped 950 carloads of oranges this season, as against 1440 carloads shipped up to this time last year.

The apple specialist having compiled figures for the past four years shows a shortage in the apple crop in every state in the Union.

The Riverside packing houses are getting down to work again. Last week the shipments of oranges and lemons passed the 200 car mark.

The first orange car special run east by the Salt Lake left Riverside last Friday, arriving at Provo, Utah in the quick time of 33 hours and 25 minutes.

Hon. Elwood Cooper is at the head of a company which is investigating a new process for arresting the ripening of fruit, whereby it may be shipped without refrigeration.

Nordhoff has a large orange crop ready to pick, estimated at 130 to 150 car loads, about twenty-five per cent. over last year's crop. A good crop is being gathered around Fillmore, Bardsdale and Sespe.

The acreage of strawberries in the Florin district is decreasing very appreciably, and persons on the ground and who have given the matter considerable thought incline to the belief that it will be one-fourth less this year than it was last.

The Santa Paula Chronicle asserts that lemons grown in the vicinity of Santa Paula are known to have better keeping qualities than those from other parts of the state, and the trees bear more lemons in the summer time than places farther from the coast.

The stockholders of the Santa Paula Citrus Association have about 100 acres of lemons now, and expect to plant about 70 more acres this year. The new acreage that will be planted means the employment of much more labor, more business and money for Santa Paula.

The Coachella Submarine: "Sylvanus Starrett left Sunday for Fresno to bring 100,000 rooted Malaga grapevines to the valley, which will be distributed to farmers throughout the valley who got in their orders early. From 500 to 600 acres of Malaga grapes will be planted in the valley this year.

In the vicinity of Cloverdale, thousands of acres of vineyards are planted, and at Asti the Italian-Swiss Colony has its large dry wine vineyards, winery and distillery. Here is situated the largest wine tank in the world, having a capacity of 500,000 gallons, blasted out of solid rock.

Mr. H. E. Collins of Los Angeles, who is shipping oranges to the Western Orchard Produce Co., of London, England, received returns last week from a car shipped from Riverside, Jan. 31st., which netted $1.50 per box. The fruit went through in thirty days, A second car was shipped from Nordhoff on the 6th of the present month.

A letter received from J. H. Arbenz now located at Ringsville, Texas, informs the Cultivator that in the judgment of the writer many of the California fruits can be grown in Texas. Mr. Arbenz, who is a nurseryman of experience, looks upon the state of Texas as full of promise in the developement of fruit and auxiliary conditions.

AGRICULTURE.

Martin Schields, a gardener and rancher in Antelope Valley, claims to have perfected a winter variety of watermelon.

The government is daily expecting a fresh supply of the deadly Danysz virus from France, with which to experiment in the control of the pesky pocket gopher.

The movement of hay in the state for the past week reached [illegible]00 tons. The Orange County peanut crop for the present year will amount to 200 tons harvested from 200 acres in the vicinity of Tustin.

The rainfall in Suisun Valley for the season is about ten inches, and the condition on the farms and in the orchards is quite favorable at the present time for the crop season.

The Coachella Valley Producers' Association shipped 187 carloads of melons last summer from Coachella. These melons were grown on 691 acres, of which 529 were at Coachella, 107 at Durbrow and 54 at Mecca.

At the meeting of the State Farm Commission, Professor Wickson of the State University recommended the purchase of the Burgess site tract near Walnut Creek, in Contra Costa county, twelve miles from Berkeley.

LIVE STOCK.

Corning, in Tehama county, is to have a new creamery.

The Pocket creamery a few miles below Sacramento, was burned down recently.

Sheep men are complaining of the depredations of dogs in the vicinity of Dixon.

A meeting of stockmen at Santa Cruz this week took steps to endeavor to checkmate the beef trust.

A cattle growers' association, with a membership of about twenty, was formed at Badger, in Tulare county last week.

Thousands of sheep are reported to have perished in the heavy storm on the ranges of Yuba county during the past week.

It is stated on good authority that a weekly stock train will shortly be put in service between the Imperial valley and Los Angeles.

Walter Butter, near Santa Rosa, has twelve incubators going. each containing 600 eggs and expects to hatch 40,000 chicks this spring.

Coyotes killed off so many hogs in the hills around Orosi, that men engaged in the industry of hog raising had to abandon the business.

Ernest Babcock of Casa Blanca is exhibiting a three legged calf born 13 days ago. The animal is strong and promises to reach a triangular maturity.

Chicken raisers in the Los Angeles section are expecting to see a second Petaluma arise, so far as egg production is concerned, at the little town of Inglewood.

The reports of the Santa Rosa Poultry Association and the Sonoma county Poultry Association, show that during this last year they each handled no less that $25,000 worth of eggs.

One of the fruits of the great irrigation movement in the vicinity of Winters is the plan of sixty-five of the farmers in that section to establish a co-operative creamery in that town.

The entire dairy herd of the Napa State Hospital, consisting of over eighty head of fine selected cattle have been poisoned by some person. On Sunday, a week ago, the whole herd suddenly became sick and all gave evidence of being in great agony. Four cows died and several more are expected to die. The drug used was probably arsenic, placed in the water or food.

MISCELLANEOUS.

A new bank opened at Santa Paula on the 5th inst.

The new town of Corcoran is about to build its first church, Presbyterian.

The contract has been let for the construction of a railroad between Vacaville and Winters.

Articles of incorporation of the Holy City, the New Jerusalem, were filed in San Jose last week.

The season for shooting valley quail, ducks, ibis, curlew, plover and rail, closed yesterday, (Feb. 15.)

The city of Napa has placed a new bell, weighing over a ton, in the court house tower in that place.

A shipment of 1,000,000 salmon eggs to New Zealand was made last week from Tehama by the Mill Creek Hatchery.

Porterville has just organized a live improvement association, looking to street planting and the embellishment of their high school grounds.

There is to be a twelve-foot tunnel from Alameda county, under San Francisco bay, to the shores of the peninsula for a great water pipe.

The 16th annual convention of the California State Beekeepers' Association will be held in the Chamber of Commerce, Los Angeles, Feb. 20-21.

Many handsome homes were built in Glendora in the past year. The amount expended in residence construction alone doubles that of the previous year.

Among the improvements contemplated at the station of Holt, situated on Roberts Island in the San Joaquin valley, will be a railroad station, a new warehouse of large proportions and an asparagus cannery.

The people of the eastern portion of Shasta county, and particularly in the fertile Fall river section, have started a concerted movement to form a county of their own with Fall River Mills as the county seat.

The City Council of Stockton, Cal., as a committee of the whole, decided to call for an election on the issue of $700,000 of bonds for municipal improvements, including a City Hall, electric light plant, street work, children's playgrounds, sewers and garbage disposal.

The State Board of Lunacy has authorized the manager of the Stockton State Hospital to proceed with the improvement of the farm two miles north of Stockton that was purchased with funds appropriated by the last Legislature. The first work will be to level and put in 175 acres of alfalfa. The balance of the farm will be used for stock grazing and general farming.

Says the Imperial Press: "The party to take up the work of making a geological survey of the Salton basin arrived in Imperial last Thursday. They will be joined by other parties and expect to complete the work in three months. It is supposed that this work is done just at this time to furnish accurate data to the United States Government concerning the damage done by flood waters both in Imperial and by the overflow now flooding the Salton basin."

LINER ADVERTISING

Advertisements in Liner Column will be charged 1¼ cents per word. No advertisement taken for less than 25 cents. Eight words to a line.

LINERS

BLUE ANDALUSIAN EGGS FOR HATCHING, from three noted strains, $2.50 and $3 Incubator lots $7.50 to $15.00 per 100. Mrs. T. R Griffith, 3111 Walton avenue, Los Angeles.

BRAWLEY NURSERY, ERICKSON & HENRY, Props., Brawley, Cal. For sale. 70,000 malaga cuttings, guaranteed true to name and free of disease: also ornamental palms and shade trees, and all varieties of imported and home grown citrus and deciduous trees. Write for price.

STANDARD-BRED BUFF ORPINGTON Eggs, $2.00 and $3.00. Fertility guaranteed. N. Hayden, Altadena, Cal.

BLUE ANDALUSIAN CHICKENS, EGGS for setting, $1.50 and $2.00 per 15; fertility guaranteed. Write for prices on our Line Bred Squab Breeding Homers. J. W. Peckham, 1716 West 20th street, Los Angeles, Cal.

FOR SALE—35 STANDS OF BEES IN first-class condition, also a lot of empty hives. Can be had at a bargain if taken at once. Mrs. M. A. Ellis. Glendora, Cal.

FOR SALE—PUMPING OUTFIT. A NO. 4 Byron Jackson pump and 15 H. P. gasoline engine. Address J. B. French, Secty. Orange Grove Tract Water Co., Pomona, Cal.

A Big Seed Offer

Convincing Seed Buyers of the Quality of : : :

Taylor's Seeds

Try Seeds First, Then Send Money

In order to introduce our seeds as rapidly as possible we will, upon request, send one each of our specially arranged collections of choice vegetable and flower seeds. The quantities are proportioned and selected to give a continuous supply of flowers and vegetables of high quality throughout the season to those who do not care to wade through long catalog lists. So certain are we that they will give satisfaction, that we will send our collection of flowers, 14 varieties, and our vegetable list, 14 sorts, for $1.00, and wait for our pay until you have tested the seeds and proven to your own satisfaction that they will germinate and produce the results we claim. If they are not first-class you do not send us a cent, if they "make good" June 1, send the dollar.

You know we could not do business on such liberal terms if our seeds were not as represented. They are guaranteed true to name and the seed grown. Remember, we require no money in advance. Order today, using coupon below, and you will say it was one of the most profitable dollars you ever spent.

F. Gilman Taylor Seed Co.,
Box 27, Glendale, Cal.

Please send me prepaid one each of your vegetable flower collection, If they grow satisfactorily, I will pay you $1.00 on June 1st, 1906. If not satisfactory, it is understood that I am to be at no expense whatever.
[Write plainly.]
Name ....
Address ....
State ....

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Are Past Masters in the Art of Manufacturing

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138-142 S. Main Los Angeles

"Greatest Sporting Goods House"

Live Stock and the Dairy

BY MRS. MINNA E. SHERMAN, FRESNO, CAL.

DEHORNING CATTLE.

As I have five letters on hand referring to this important subject, I think it may be well to take it up more fully, as the time to dehorn is at hand, when the grass is good and before the filies become bad. Nearly every month the newspapers tell of some one being gored by the trusted and gentle dairy bull—that fantasy of the brain, the gentle bull—that in a paroxysm of rage has turned on his attendant, the only gentle bull to be trusted is the dead one, and the better his breeding the worse his temper. Over every dairy barn the following should be posted, "Treat the the head of the herd well but beware of his friendship." It is often asserted that the muleys have injured their keepers and the men have been knocked down by them, but it is rare compared to the number that have suffered by the sharp horns which catching in the clothes and throwing the victim down, and tossing him around, the hornless animal is powerless to do more than roll and bump the prostrate man around on the ground, I have often seen the men here, on the ranch when a dehorned bull rushed at them ,stand until he almost reached them, then jump aside and be in a place of safety before he could turn and come back at them.

It has seemed to me that in many cases, the head was more tender when the animal was dehorned than when it was in nature; that it feared to use the head to butt like a real muley, though this may not be true except in a limited number of cases. I have often laughed to see a gay little yearling with the short little spikes of horns chasing the great fellows weighing nearly a ton around the pastures.

A Dehorned Thoroughbred Holstein.

While the males are dehorned for the sake of the men handling them, the cows are dehorned for sake of peace, so the same poor cow will not have to take all the punches and knocks, the herd eats and drinks and sleeps quietly, one cow cannot stand by the trough and keep all the rest from drinking, nor block the door into the barn, by threat of sharp horns.

The age at which to dehorn has to be considered. For a time the calves were dehorned with caustic potash when a week old, but the men thought it checked the calves growth, I did not think they could be right, so we tried it, by weighing the calves when dropped and taking them turn about, dehorning every other one, at the end of each week they were weighed, the dehorned ones lost in weight and were always behind the others until they were turned out to grass, some lost the week they were burnt as much as ten pounds and did not start to gain in weight for four or five weeks, while others that were not dehorned gained steadily. The horns are now removed from the heifers after they have had their first calf, if they are shaped so that they can use them for hooking. The bulls are dehorned at maturity. Personally I have never removed yearlings' horns as I believed the head bones might not be hardened enough to stand the clippers. I have been told by two men in different parts of the State that they had had losses in cattle of this age when dehorned. Our veterinary here has not met with any losses in his work for us, but he thinks it is because we use sterile tools and are insistent on the men that help doing good, rather than quick work.

The use of the saw is barbarous, and inflicts much needless pain. There are a number of dehorning clippers on the market, those that I have examined seem to be of sufficient strength to do the work quickly and well. As two of the correspondents ask for the name of ours, I will say it is the Keystone bought fifteen years ago in the East, and from the maker, a man in whose little shop my pony used to be shod when I was a child in spending my summers on the farm in Chester county, Pennsylvania, when I saw his advertisement I bought of him rather than of a stranger.

The cows are driven into a corral in a bunch and one at a time are let in at the gate of the dehorning yard, the chute is out of sight behind a barn and after the cow is dehorned she is passed on into another field also out of sight of the waiting herd. The wilder cows and the bulls are dehorned in the chute, many of the cows need the clips in the nose to control them. After the animal is in the chute, the stanchion at the end is closed over the neck, one man steadies the head, while a second does the clipping and a third takes charge of the tools used. The clippers have been previously sterilized and cleansed, are taken from a pail of hot carbolized water. The horn is clipped close, taking with it a ring in the skin, the other horn follows at once, the clipper is handed to the man and is cleaned before using it again. A small plumbers stove is employed to keep hot iron rods; these are simply old files that have been put into handles; if there is any spurting of blood that shows that an artery has been cut, it is at once sealed by using the hot iron as a cautery, if not the blood is wiped off and a piece of oakum is laid in the hole left and rosin sprinkled over it and the hot iron used to melt it to form a covering, this makes a scaled wound that flies cannot trouble. I used to feel badly, fearing the dehorning was painful, but now I believe it is only bad for the moment, like having a tooth pulled. The cows dehorned at noon show only a slight decrease in the milk and eat as though nothing had happened to them.

Prof. Carlyle thinks that in a few generations the horns could be bred off cattle altogether. I suppose though at present we are all too busy trying to increase the profits of the herd to stop to take up this. At first, it would be like the color fad in cows, a drop backwards. I can remember when white was a blemish on a Jersey cow. I have seen heifers sent by my uncle to the butcher from fine Jerseys because they were not solid colored. The time may come when the horns will be cultivated and shaped by scraping the side to which it is desired to have it curl, for every one seems to love a crumply horn, even children, in my day, were not to enlightened to say "The cow with the crumply horn; milked by the maid forelorn." The neighbors when they buy a cow want her good and want her handsomely marked and the crumply horn is regarded as a beauty mark.

BREEDING DRAFT HORSES.

There is one more line of work that I wish to mention and that is the horse.

California has acheived great reputation for her fast horses—runners, trotters and pacers. I do not wish to say anything against speed horses—they have their place. I like to see a good race. But the raising of fast horses is a special business. Every livestock farmer can raise draft horses—heavy or medium. James McNab of San Francisco, who has had large experience as a buyer, writes: "It is a fact that at the present time there is a great scarcitv of heavy draft horses in this State. I have been constantly a buyer of heavy horses for 30 years past in San Francisco; have always traveled throughout the State in that time looking for and buying stock, and I must say that at no time during that period have good draft horses been so hard to find as at the present time.

"I know of no opportunity in the stock business that affords such profitable inducements as that of raising heavy draft stock. Five-year-olds, weighing from 1700 to 1800 pounds, readily bring $300 each in the San Francisco market, and higher prices are paid for fancy animals.

"Good 1600-pound teams and over are scarce and sell for from $500 per span and upward. They are salable when five years old, and, unlike roadsters, trotters and thoroughbreds, need no expense in the way of breaking and training.

"The fire department in San Francisco has had the greatest difficulty in finding suitable stock. At the last price made of $285 per head, the contractor failed to fill the contract.

"Had California horsemen followed up the line of breeding in recent years with the same enterprise that was displayed up to about the year 1885, I believe they would have attained even greater success than they reached with the thoroughbred or trotter, and that the California draft horses would have been noted the world over.

"Let us hope that the renewed interest manifested by recent heavy importations of draft stallions will result in an effort to put the State in the proper line for the future as a producer of draft stock."

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Offers for sale three richly bred heifer calves sired by Marigold's Exile King, out of good cows. Also a yearling son of the great cow Nettie Underwood, official-test 10,992 lbs. milk, 668 lbs. butter in one year. For records and prices write
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where mares could be substituted for gelding for work purposes. A mare will raise a colt, and, with judicious handling, will lose but a few days from the field. As has been said already, the demand for horses of this type is great and the prices obtained good.

FODDER FOR THE DAIRY HERD

The often uncertain conditions which obtain in California during the period when we should be feeding the best materials for the production of milk in summer, has led Dr. Cherry, a celebrated bacteriologist, to write an exhaustive article which we publish in part herewith, for the very excellent suggestions he makes. His object is to give a general view of the problem of foods and feeding, and to see what provision can be made bv planting crops which will be available for the coming summer. When pastures furnish an abundance and variety of grasses, no better food can be found for the milch cow. But before ripening mixed grasses contain from 65 to 80 per cent of water, and a cow requires at least 100 lbs of such material in the course of a day if she is to yield a profitable quantity of milk. This amount represents two corn-sacksful, pressed down pretty firmly. As the grass dries it loses a great deal of its water, so that the same amount of nutriment may be obtained from much less weight. The cow finds it hard to obtain sufficient nourishment to keep up her own weight, without any surplus to spare from which she can manufacture milk.

For it must be remembered that the animal body is like a machine in this respect, that it is able only to transform the food materials into other forms of energy or into different chemical substances. It is no more able to create within itself the power of doing work or of secreting milk than a steam engine can keep on running when not supplied with wood and water. The food of the steam engine consists simply of carbon and water. That of the animal is more complicated. Water and carbon it must have in abundance, but the carbon is useless for the purposes of life in the form of charcoal. It requires to have been first of all worked up by plants into the form of starch and sugar, or of oils and fats. But the animal differs totally from the steam engine in this respect. Not only must it have the foods already mentioned, but others still more costly and complicated must be provided. This class of foods is called protein or albumin, and is found to consist of not only carbon and water, but also of nitrogen and traces of phosphorus and sulphur.

* * *

Chemical composition of foods.—Wherever life of any kind exists, whether it be in the form of plants or animals, the above classes of chemical substances are always found. However different a plant may be from an animal, the difference is due to the varying distribution of these materials, rather than to the presence of any distinctive substance in either plant or animal. Speaking roughly, plants are distinguished bv the preponderance of carbon, animals by the relative amount of protein.

Carbon forms the charcoal of the plant. It exists in the form of wood and fibrous materials, as starch and sugar (carbohydrates), and as oils and fats. Wood and fibre is generally too tough for the animal to digest and utilize as food, but the carbohydrates and fats form most important articles as food. They serve as fuel for the body, keeping up its warmth, and supplying it with much of the material for doing work. In the case of the cow they furnish a large part of the solids of the milk. For these purposes any given quantity of fat has a food value of two and a quarter times the same weight of carbohydrate. This fact explains the instinctive liking that all animals have for fatty foods in cold weather. The starch, sugars, and oils which are found most abundantly in seeds and fruit show that they are present in all parts of the plant.

Protein consists not only of carbon and water, but also contains nitrogen, and traces of phosphorus, sulphur, potash and many of the inorganic salts. Its distinctive feature is the nitrogen which it contains. Protein is the essential part of all living substances, and it is for its replenishment that nitrates, ammonia, sulphates, and phosphates are required in manures. Nitrogen exists in nature chiefly in the form of the gas which constitutes four-fifths of the atmosphere. But with some few but very important exceptions, plants are not able to make use of it in this form. They require to have it presented to their rootlets in such form as nitrates or ammonia salts dissolved in the water of the soil. The plant stores the nitrogen chiefly in the seed, and thus in the form of protein it becomes available as food for animals. The white of egg, lean meat, and the casein of the milk are examples of nearly pure protein. Blood, muscles, nerves, and organs, not only consist largely of protein, but they require this same substance, or others very like it, as food to make good the wear and tear of daily life, and to provide for growth and development. Hence protein is an essential part of the food of all animals. The plant, under the influence of the heat of the sun, slowly and laboriously manufactures it from the soil; animals eagerly appropriate it from the plant or else from one another, so that the struggle for existence has been well described as "The struggle for nitrogen." Every moment the living parts of our bodies are being worn out and renewed, and this renewal can only be effected by protein in the food. Protein is therefore, an essential part of every ration, and from what has been said it will be seen that it is the scarcest and most costly part of every ration.

* * *

Digestible and palatable.—But while the chemical composition of the food is thus fixed, there is another point of supreme importance. The food must not only have the right constituents, but it must also be digestible and palatable. The mere taking of food into the stomach is not sufficient to sustain life. The juices secreted by the walls of that organ must act on it, and reduce it to such a condition that the solid parts become dissolved, and are thus able to permeate the walls of the stomach and intestines and enter the blood. By the blood they are carried to all parts of the body to supply the food required by the working parts. The food must therefore contain a proper proportion of digestible matter. When the stomach is filled with a mass of dry, hard, unnutritious grass, leaves and straw, not only is the animal deprived of proper nutriment, but it cannot make use of the digestible parts of that which is actually present in the stomach. ,

* * *

Varied and Appetizing.—Then, also, the food must be varied in character and appetizing. We all know the effect upon ourselves of the way in which a meal is cooked and served, and the same holds good for all animals. The sight and smell of food, and the anticipated enjoyment of the meal are the chief stimulants to the secretion of the gastric juice. It has been shown by recent experiments that suitable food may be placed in the stomach of a starving animal, and no attempt will be made to digest it if the animal is not aware of its presence. In the same way the digestive juices will be secreted in abundance if the animal merely thinks he has swallowed food. He may be completely deceived on this point, but preparations for the digestion of the meal are made all the same. Hence successful feeding implies variety as well as quantity and quality.

Among the articles of green fodder recommended to be cultivated are alfalfa, vetch, Canadian field peas, barley, cow peas, horse beans, oats, rye, soy bean and sorghum.

In the vegetable line is recommended sugar beet, cabbage, carrots, parsnips, potatoes, pumpkins and turnips.

Hay, in the following articles, barley, oats and alfalfa.

These ingredients, says the author, "when combined in a balanced ration form the best feeds for best results, we can give the dairy cow."

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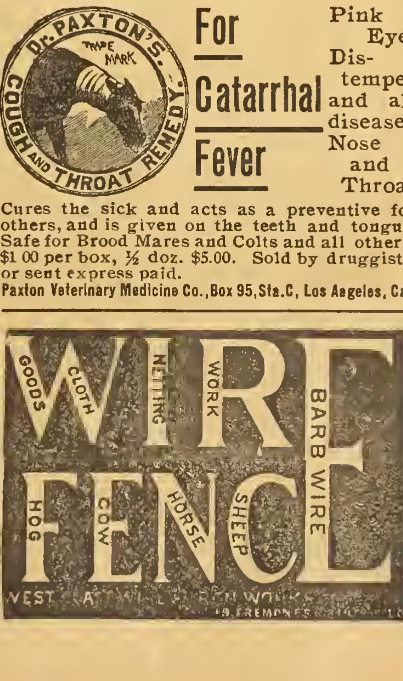

Profit in the Poultry Yard

BY MRS. A. BASLEY, HOLLYWOOD, CAL.

FERTILITY OF EGGS.

At this season of the year, when it is all important to have fertile eggs, I may be pardoned if I continue the subject. It is well worth while to try one's best to have fertile eggs at this season, for next fall and winter eggs depend upon the pullets hatched in the spring. Last week I mentioned the proper food for fertility (it is the "balanced" narrow ration of 1.3) a few more words not calling it really the balanced ration, but "Nature's ration." Nature's food in the spring time would be plenty of tender green grass, clover, alfalfa or sprouting grain. You cannot expect fertile eggs without an ample supply of green food, an unlimitetd supply I had almost said. Nature also supplies in the spring after the rains an unusual amount of earth worms and larvae of insects. We must imitate Nature and increase our supply of animal food, but even Nature demands exercise. All her feathered children have to work, fly, scratch or run to gain their sustenance, and our imprisoned little friends must have exercise or their eggs will not be fertile. The exercise of scratching is more needed in the spring than at any other time, because it strengthens the organs of reproduction. Let a few hens get into your garden just when the seeds you have carefully sown begin to show their heads, or if you do not care to have such an object lesson, plow up or dig up their runs, and plant seeds, barley, wheat, oats, rape, lettuce, or anything you have and let the biddies do the cultivating. This will help the fertility more than anything and also greatly increase the egg yield.

I never give red pepper or stimulants of any kind during the breeding season. Stimulants are no more a food or a benefit to fowls than whiskey is a food or a benefit to a man. When stimulants are fed infertility will be noticed in the eggs and there will be mortality in the chicks that are hatched. In seasons when eggs show a large percentage of fertility, the chicks will usually be sturdy and thrive, whilst on the contrary, when the eggs do not hatch well, the chicks will be weakly and difficult to raise, will be liable to take cold and will readily fall a prey to any chicken epidemic that may be prevalent. In other words they will have weak constitutions. As I explained last week there are several causes for infertility of eggs, but the chief causes can usually be traced to improper food and lack of exercise.

* * *

In an Eastern poultry magazine I saw a letter on infertility. The writer asked if it could be possible that the use of blue stone in the water, as a preventitive or cure of roup might be the cause of the great infertility in eggs last season. Blue stone (sulphate of copper, is a poison, a very powerful germ killer, or else it would not kill the roup. Blue stone is the foundation of most of the roup cures in the market, which are to be given in the drinking water, and I think it very possibly may kill the delicate germ of life in the egg.

The fertility or infertility of eggs is an interesting and at this time of year a very important subject. People are very apt to jump to conclusions and to think they know all about it from one short experience. One man, for instance writes that infertility comes from the large number of eggs that hens now lay, quotes the wild birds as an illustration that their eggs are never infertile. This, however is a mistake, as I have found out myself in partridge and quail eggs.

Now as an offset to his theory, I had a hen called Snow Queen, that lived nearly seven years. She must have laid over one thousand eggs. I never knew one of them to be infertile. One of her sisters laid almost as many, all fertile, and another half-sister I think never laid a fertile egg. I had one hen I bought. She was a beautiful bird and I wanted to get new blood through her. I kept her three years. I set every egg and not one was fertile. These are merely interesting facts. One hen I had only laid four eggs in one month; none of her eggs were fertile. In all my years of experience and close observation and especially after using trap nests I found that my highest scoring birds were my best layers, and with the two exceptions I have named, my best layers had the most fertile eggs. My fowls were of the American class.

In the matter of fertility there is much difference in the different breeds. The Mediterraneans or the smaller, lighter, more active classes do not give the same amount of anxiety to the breeder as the larger, heavier breeds. This is one reason for the difference in the experience and opinions of fanciers, it is frequently simply caused by the difference in the size and activity of the breeds.

The comb is an indicator of much value in mating, especially among the larger, single combed breeds of Mediterraneans, and can help us determine the probabilities of fertility. It is safe to conclude that when the combs are shrunken or pale and flabby looking in either male or female the chances of fertility are poor. Breed only from the hens that are your very best layers and that are in vigorous health, and mate them to the best and most active male in your yards.

The old say, "The male is half the pen," should be remembered. Choose to head your pen of two year old hens, a good vigorous cockerel, the son of one of your best layers, choose one as near up to standard as possible. If you have not got one, buy a good one from a bred-to-lay strain.

When I was in the forest of Montmorenci for two summers, the nightingales sang all night and all day. "When do they sleep? I asked "Oh! Do you not know?" was the reply. "There are nightingales that sing only in the night, and others that sing only in the day. And the young ones inherit the same, the young of the day singers only sing by day!" A curious fact that was brought to my memory by seeing it asserted that if good fall layers are wanted the eggs should be incubated from hens that are from fall and winter layers. Please some of our readers experiment along these lines.

* * *

EDITOR'S QUESTION BOX.

Trapnests—Breeding. (E. R. P., Santa Rosa.) We have been readers of the "California Cultivator" for six months, and have received great help from the Poultry Department. I want to ask you to take up the subject of breeding. We are extremely new to the business of scientific poultry raising and have a very hazy idea of the terms. Line breeding: cross-breeding: in-breeding: breeding for utility: breeding for fancy, etc. Our chickens are White Leghorns,

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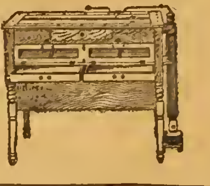

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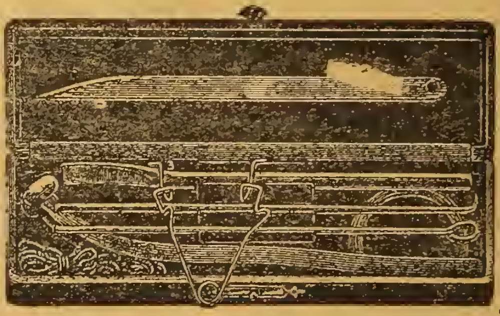

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White Leghorn Eggs for hatching, in incubator lots only, at Ten Cents a dozen over Los Angeles market quotations. **Avenue Poultry Yards. Ventura, Cal.**

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McCLANAHAN CO., LOS ANGELES, CAL.

and we want to develop a flock of heavy layers. I also want some help on the subject of "Trap-nesting." How do you do it? You mentioned the Maine Experiment Station nest as the best suited for the purpose and that the design could be supplied through the "Cultivator." I would very much like to have it.

Answer.—The trap-nest with the plans for making it was described fully in the "Cultivator" of January 17th, 1905. I have requested the office to send you one. If you were living near Los Angeles I would advise your sending to Henry Albers, 315 South Main or to S. H. Church, 503 South Main st, for one of the nests already made, then you could copy it. It is exceedingly simple and easily made. I made them myself from the description. The lid or cover, (a simple bit of board) is not given in the description, just the nest part.

To develop a flock of good layers, hatch **only** the eggs from your best layers. Like begets like. If you want to have hens that lay in the fall, hatch eggs from your best fall layers. If you want hens that lay large eggs select the large eggs for incubating and so on. You can get just what you want by careful, watchful work.

I will follow your suggestion and talk about breeding which is indeed a most interesting topic.

* * *

Trap-nests.—(J. C. H., Newcastle.) I see in the "Cultivator" you state you gave plans of a Government expert on making trap nests. I was sick for some time and must have missed it. Would you please have it published or send me description through the mail. Am afraid I am asking too much, but am very anxious.

Answer.—The plans and description of the best trap-nest that I have ever seen, because the simplest and easiest made and that does not alarm the hens, was given in the "Cultivator" of Jan. 17, 1906. It can be sent from the office or if sufficient of our subscribers ask for it, I will print it again. See reply to E. R. P.

UNWISE METHODS OF FORCING HENS.

The desire of many poultrymen when their hens first begin to lay, is how to force them to lay without ceasing, and as the eggs cannot be produced from nothing they conclude that the more food the more eggs; but that is just the rock upon which so many are wrecked, for the forcing process does not limit its operations in any one direction. In forcing the hen for eggs she is forced to do many things that are not desirable. She may be forced to become too fat or diseased, or to be utterly worthless for any one purpose whatever. Her capacity is limited, and when she is driven beyond that capacity she breaks down entirely. No hen can be forced to lay eggs. Nature gives her a certain period of time during which the eggs are developed. It is not difficult to supply her with the needed elements for this purpose, and any surplus bestowed will only be a waste, for if she cannot divert the materials to the production of eggs she will either void them or lay them up in the storehouses of her body, as fat, and will then become utterly unfitted to perform her functions thoroughly as a producer of eggs. There are many methods by which persons try to force hens to lay. One will put red pepper into the food to stimulate them, not being aware that red pepper has no more influence on the generative organs of the hen than so much sugar or salt, and the stimulant effect derived is merely imaginary. In fact, red pepper is cooling to a certain extent, and its pungency is but temporary. Another believes in putting tonics in the drinking water, believing that they are helpful, and tonics are composed of nearly all substances, many of which are rank poisons, such as copperas, tincture of nux vomica, etc. Even the well known Douglass mixture is swallowed by the hens with the water they drink to assist them in laying eggs Yet when the hens succumb to the several effects of the nostrums they are condemned as not being hardy or the difficulty is attributed to some disease which calls for more nostrums. If a hen is healthy and has a good appetite the nostrums cannot improve her. Eggs are not produced from powders, pills or solutions but from the food. A healthy hen is no subject for medicines or tonics If she is sick or drooping it is not out of place to assist her to regain her health with a tonic, but as long as her comb is bright and red and she scratches and works vigorously enjoying her food and laying eggs as fast as nature permits, the use of stimulants or tonics will not benefit her or enable her to lay another egg more than she would without their use, even if they do not injure her.—

$8.00 COCHINS $8.00
A TRIO
BUFF, BLACK or WHITE

Send for circular, giving undefeated show records. These are the best winter layers, finest table fowls, and by far the most healthy and hardy. Eggs, $2.00 per setting of 15. Prize winners, Eggs, $3

HARRY McINTIRE, SAN DIEGO, CAL.

HOW TO CLEAN EGGS.

Regarding the proper method of cleaning eggs, a New Jersey poultryman says:

"Eggs all of one color and perfectly clean make an attractive appearance and will readily bring several cents more per dozen than a dirty lot, particularly when quality goes with appearance, and the one is generally an indication of the other. An egg is improperly cleaned when it is wet too much and not rubbed dry with a dry cloth. Some when they see spots of dirt on eggs, put them in a pan of water and wash them like potatoes. There is, on the freshly laid egg, a mucilaginous covering which gives it a velvety appearance peculiar to new eggs. Water removes this, making the egg have an older appearance, and destroys its keeping qualities, as this covering makes the shell impervious to air. An egg, then, if it is not much soiled, should merely be moistened where necessary, and rubbed dry. If the blemish is in the nature of a stain, a little powdered scouring brick will help, and if this is not effective vinegar may be used in addition. In this way any stains may be removed from an egg. Sometimes they have to be put in water, but do not do it unless it is necessary, and then rub dry afterward. If this is not done they will look soiled and dingy. Eggs should be collected three or more times a day.

LOOK AT 'EM.

A woman said to us the other day, "I can't succeed at poultry raising." Why not? I asked, look at the women all over California who have made a success of the poultry business. Mrs. Basley, with her chickens, or Mrs. Sherman with her dairy and vineyard are examples of what a woman can do who tries to succeed. It's all in grit and knowing how.

Buff Plymouth Rocks

A few fine cockerels $2.00 to $4.00 each. Eggs, $2.00 for 15. Very choice Eastern stock.
F. W. Tutin, Riverside, Cal.

Rhode Island Reds

Fine stock of cockerels and hens for sale. Eggs, $1.50 per setting.
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Single Comb Brown Leghorns

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Stock for sale and eggs for hatching. Eggs from first pen $2.00 per 15 eggs, second pen $1.50 per 15. Incubator lots for $6.00 per 100 eggs. They have always won first prize whenever shown. Large birds and heavy layers.
W. E. Mercer - - Ventura, Cal,

WILLARD POULTRY FARM, HYNES, CAL.
Mrs. F. T. Hungerford, Manager
INDIAN RUNNER DUCKS

At San Francisco show, 1905, I won 2nd and 3rd on young drake and 1st on young duck, with 3 entries. At the 1906 Los Angeles show, 1st on old drake, 1st and 2nd on young drake, 1st and 2nd on young and old duck and 1st on pen. Eggs—$1 for 13, $3 for 50, $5 for 100. Hens' eggs all ordered up to April 1st.

Fairview Poultry Yards
W. Plymouth Rocks—S. L. Wyandottes

At the recent Los Angeles show our Wyandottes won as follows: 1st cockerel, 1st, 2nd and 3rd pullet, 4th cock. But 5 entries made. No Rocks shown. Special mating of White Rocks, pen headed by Fairview Prince, a son of the best laying hen in our yards. Eggs, either variety, $1.50 per 15, Eggs from utility pens, $1 per 15. ***A. E. Nelson, El Monte, Cal.***

Eggs Wanted for Hatching

Our big adobe incubator brings the best results. Send us your eggs and we will return the chickens. Young Chickens and Turkeys Wanted.
Bamboo Poultry Ranch - Glendale, Cal.
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Silver Penciled and Columbian Wyandottes

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Buff and Brown Leghorns
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Eggs and Young Stock in Season
W. W. Bliss - Duarte, Cal.

English's Golden Laced Wyandottes
Blue Ribbon Winners

of the Pacific Coast. During the past few seasons they won the ***Highest Awards*** at San Francisco, Alameda, Fresno, Los Angeles and San Diego shows. Did not exhibit this season owing to change of location, but my Goldens are superior to any of those I have raised before. Two breeding pens only containing the grandest Golden Wyandottes to be found anywhere on the Pacific Coast. Eggs from these matings, $2.00 per 13. No stock for sale.
J. English
P. O. Box 392, Arroyo Grande, San Luis Obispo County, Cal.

Poultry Ranches in California

Are more profitable than anywhere in America. Conditions are exceptionally favorable for breeding, and chickens and eggs always bring better prices. The finest poultry land in the state is near Los Angeles. For full particulars write or call.
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Realty Trust Company, 129 So. Broadway, Los Angeles, Cal.

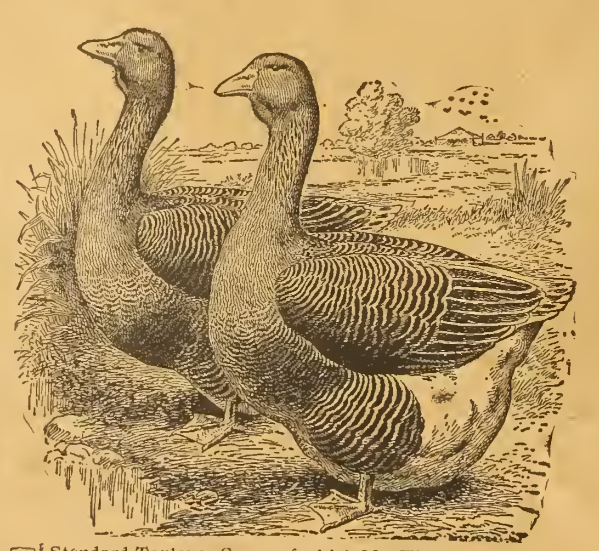
RAISING TOULOUSE GEESE FOR PROFIT

A few generations ago the breeding and raising of geese was one of the commonest branches of poultry culture in this country. And why people don't follow it more now is a question I will submit to answer. It must be that so few know the profit that can be had from a flock of geese.

I have had great experience in the poultry business and until I started raising geese a few years ago "experience was my only profit.

There has been greater improvement in the Goose family than in all the fowl kingdom, but I will take up the goose where we find him to-day, the wisest and most cunning, as well as the hardiest and most profitable member of the whole poultry world. And when we think of the many benefits derived from a flock of geese; the flesh, I can say without fear of contradiction, is of the very best, the feathers are used for beds, the quills are used for writing-pens and tooth picks, the down is used for pillows, and the grease is used by nearly every doctor in this country. Most of our grandmothers used to think there was nothing quite as good for children with a cold as goose-grease.

The best way to start a flock of geese is to get a pair of old ones, as it is the best and cheapest, and by far the most satisfactory. My geese begin laying late in January. I arrange some boxes and barrels with litter in and they find the places provided for them. Be very careful not to disturb the goose while she is on the nest. A goose will lay from 14 to 18 eggs, then she gets broody and wants to set. Shut her up away from the nest a few days and she will forget all about it, and go right to work laying again. I gather the eggs and keep them little end down in a well-ventilated room until I have enough to set a hen or incubator. If setting hens are used, keep them free from lice by dusting them with a good insect powder every week, and put from four to six goose eggs under each hen. After eight days test out. leaving four fertile eggs under each hen to hatch. Goose eggs should be sprinkled every fourth day after the twelfth one, in damp or cold weather with warm water 103, in hot, dry weather float from one and a half to two and a half minutes in warm water 103 degrees.



⊏⊐[Stondard Toulouse Geese, of which Mr. Higgins has one of the largest flocks in the State.

If incubators are used, float instead of sprinkling, the last float just before or when they pip, holding the pip up so as not to fill the shell with water and drown the gosling in the shell. If the gosling remains in the shell and dries, he should be helped out. Break away a little of the shell and if the inside lining does not bleed he is ready to come out. Wring out a cloth from water as hot as you can bear your hands in, wrap the egg in the cloth and leave it for a few minutes. You will find the gosling will come out bright and clean. Keep the goslings warm till they are dry and can run around. When they are 24 hours old, put them in a box, the bottom covered with sand, and feed often with a crumbly mash of one-third corn meal, to two-thirds bran. They are very easily raised, and no other young in the whole tribe of domestic poultry is so up-to-date and helpful as a young gosling, and given a tender grass plot, and a little warmth, he goes merrily on his way, nipping a living and asking favors of no one.

Geese are turned out to pasture just the same as cattle. Their bills have serrated edges which enables them to graze. Grass is the most important of all foods for young goslings, thereby costing very little to raise, and they grow as by magic. I use a stall in the barn as a brooder, keeping the goslings in a box at first with an old carpet thrown over it.

There are some things about raising geese which can be learned only by experience, and a little practice is worth a world of theory. Toulouse geese need good fresh water to drink at all times and none to swim in. You should arrange the drinking fountain so the goslings cannot get all wet, and not allow them to swim in any pond or stream till after they get a coat of feathers. But the drinking vessels should never be empty.

Geese need no warm houses in Southern California. An open corral is much better, where we have no severe winters, and the grass is green all the year. They will do well and stay in good condition the year round. So the cost of keeping them is simply the value of the grass they consume. Through the laying season in addition to grass, I feed a handful of rolled barley or wheat, and at all times keeping plenty of coarse sand where they can get it.

Toulouse geese are not subject to sickness, vermin, diseases of any kind. Barring accidents I raise all I hatch, when six or seven months old or at maturity, you can usually, by observation, tell the ganders from the geese. The male, in most cases, grows some larger than the female, the goose is deeper in the body, a trifle slimmer in neck and smaller in head. The call of the gander is loud, long and shrill, while that of a goose is merely an answer to it. Separate a flock by driving part of each side of a fence or building and you can distinguish most of the ganders by their calls. Never look for a curled feather in the tail or any outside marks

Standard Bred S. C. White Leghorns

EXTRA LARGE BIRDS AND HEAVY LAYERS. Eggs, $2 per 15; $8 per 100; $60 per 1000 from January until July only.

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"Your Machine Hatched the Surest of the Lot. It was easy to adjust and easy to regulate. Your lamp is good, reservoir simple and compact and All in Sight." Freight prepaid and catalogue free.

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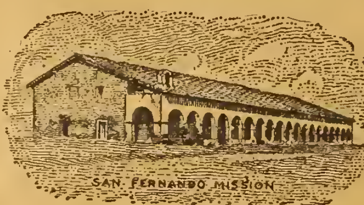

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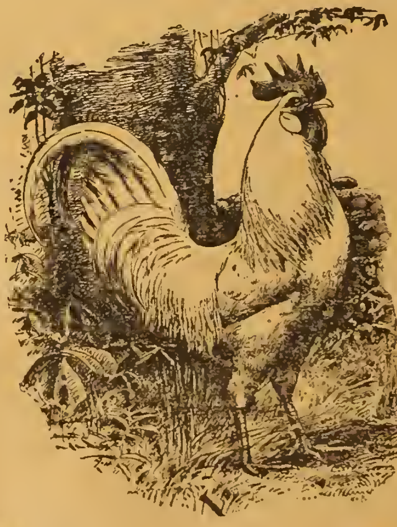

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Best Strain, Best Birds.
Greatest Layers. Largest Eggs.

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All specials and medals—best hen, best head, pure color.

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FIRST PRIZE PULLET at Madison Square Garden, New York, 1905, as well as one of the best cockerels in the U. S.; were sired by our famous Rob Roy Jr.

Our patrons report grand success with pullets from our stock; 26 eggs per month, 56 eggs in 64 days, 18 eggs in 19 days; eggs that weigh 2⅓ to 3 ounces.

229 eggs already this season.

Improve your flock with one of our large, beautiful White Cockerels.

Birds and eggs for setting. Price list mailed on application.

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THE WORLD'S GREATEST EGG PRODUCER.

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Fine large stock, heavy layers, best of broilers. Eggs, $1.50 per setting.
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Prize winning birds at Central California Fair, where 7 firsts were won in '05.
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Prize-winners at Chicago, St. Louis, San Francisco and majority of prizes at Portland on Buffs. Choice Cockerels and Pullets for sale.

White Rocks Exclusively
Limited number of young birds. Eggs from prize winning, producing strain, $2 per 15 or $5 for special mating. Write for circular.
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Eggs for Hatching from Imported Fowls
Barred Plymouth Rocks, Buff Orpingtons and White Leghorns imported from Government College, Canada, none better in the State, also White Plymouth Rocks, at $1.00 and $2.00 per setting or $5.00 per 100. Also offer for a small price 3 Imported Barred Rock Cockerels (pullet mating) at $5.00 each. Orders filled promptly.
Thos S. Armstrong, Galla Poultry Ranch, Anaheim, Cal.

100 White Leghorn Hens and Pullets For Sale
A Bargain. High-grade birds, large, healthy and vigorous, all laying and will pay you $1 per day profit right now. Only offered because we need the room. $1.25 each in any quantity. Write at once. **Eggs for Hatching.** High quality, low prices. First prize winners at Los Angeles and San Diego.
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White Leghorn and Barred Rock eggs for sale, $1.00 for 15, $4.00 per 100. Fertility guaranteed. Correspondence solicited.
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White Leghorns, 10c.
White Ply. Rocks, 12½c.
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Send for large circular fully describing these machines.
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and Fancy Pigeons. Largest stock on the Pacific Coast. Homers in 500 pair lots. Twenty (20) varieties of Fancy Pigeons. Safe shipments any distance.
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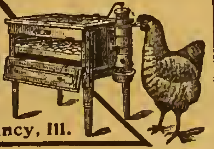

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S. C. White Leghorns—Heavy layers. Eggs, $1.50 per 15, $5.00 per 100.
Indian Runner Ducks—Males for sale. Eggs, $1.00 per 13, $3.00 per 50, $5.00 per 100.
Mrs. J. L. Updyke - Fullerton, Cal.
Successor to Jacob Kreger

Rose Comb White Leghorns
High Grade Buff Orpingtons
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White and Silver-Laced Wyandottes
White Plymouth Rocks
White Leghorns and Black Minorcas
Plymouth Rock and Wyandotte eggs, $2.00 per setting, $8.00 per hundred.
Leghorn and Minorca eggs, $1.50 per setting, $6.00 per 100.
I have been breeding thoroughbred poultry for over 20 years and have as fine stock of these varieties as there is on the Pacific Coast.
I also hatch and can supply little chicks from a dozen to a thousand from the above varieties delivered anywhere within 72 hours of San Jose. Prices on application.
J. S. Smith, Box 526, San Jose, Cal.
YARDS—CORNER MOORE AND CHAPMAN STS.

such as I have seen in some cuts, for there are none. Early in the spring it is easier to tell them, by teasing them, but it must be understood and done with care.

Geese live to a great old age, but are not profitable to raise in confinement, they must have a pasture where the year round they will live almost exclusively on alfalfa, grass or weeds, needing little grain, and thriving well. When geese are in proper condition they will lay from 36 to 50 eggs in a season, and under favorable condition the eggs should all hatch, say you raise 35 goslings up to an average of 12 pounds each at a cost of raising of six cents per pound, and sell them at 18 cents per pound, leaves you a nice profit of over $50.00 and you still have your pair of old geese. Show me anything on the farm that will come up to this with as little trouble, and I am using the lowest figures as my geese brought me a little over 20 cents per pound last year.

A great many people write from all over the State, asking about geese such as "are they as profitable as chickens," "do geese do well in Cal." and "what breeds are the best" (I hope none of them miss this issue of the Cultivator.). Toulouse are the only geese I have, and can not say as to other breeds, but I don't see why other breeds will not do as well as Toulouse. Southern California is the best place in the Union to raise geese in, as a small patch of alfalfa will feed a large flock of geese.

Any one can find ready sale for the feathers, at 75 cents to a dollar a pound, just let it be known in the city that you have good feathers for sale and you will soon find you did not have enough to go around.

Geese can not be raised in great droves like chickens and ducks by the thousands, "that gives a better chance for every farmer's wife!" to make a few dollars for herself, she can raise quite a flock in a season and make it pay, have no fear of glutting the market, green geese always find a ready sale, and there is a good demand in the fall and winter.

There is still much to be said about Toulouse geese, and a wide field open for discussion. I have only begun to tell you the good qualities there are in geese, saying nothing of the pleasure.—Hugh O. Higgins, Riverside, Cal.

WHY NOT BREED FOR EGGS.

It is not at all an uncommon experience for flocks of a dozen or more hens, all well fed and in perfect health to cease laying entirely about this time of the year and so continue for a month or six weeks. A few days ago three gentlemen on a street car were talking hen talk. Two of them had not had an egg laid the last three weeks. The other with about twenty Barred Plymouth Rocks had secured three eggs during the week—only one hen was laying. All these were of improved breeds—two of the gentlemen kept barred Plymouth Rocks and the other White Wyandottes. The only way such cases can be accounted for is, that these breeds have been carefully bred and selected for standard requirements, and not for laying qualities, as the standard does not require laying qualities, but altogether external markings of feathers, shanks, beaks, ear-lobes and wattles. This egglessness of hens during November and December should be remedied, if there is a remedy, and there certainly is. Select as breeders the best layers and males from the best laying hens; breed for yellow legs and we get them; breed for white ear-lobes and we get them. Then why not breed for eggs?

RAISING TURKEYS.

Turkey raising has become almost a distinct branch of poultry industry and requires a location very different from that needed for chickens, geese or ducks. Turkeys, while thoroughly domesticated, still retain that natural disposition to roam, and for this reason it is impossible to succeed with them in small lots. They must have range, even when this is given them they are but little more troublesome than any other kinds of poultry.

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Thorough-bred Stock. Eggs, $1.50 per 15
INDIAN RUNNER DUCKS
Eggs, 1.50 per 12,
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Blue Andalusians
At Los Angeles, 1906, our strain in a class of 68 Andalusians with 16 birds won more firsts than all our competitors combined. Eggs, $2.50 and $3.00 per 14.
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The best fowl grown; the one that is being adopted by practical poultrymen who are in the business for the net results. Unsurpassed as a table fowl, unequaled as layers. At the 1906 Los Angeles show, we won the Times Eagle Trophy, 4 silver cups and 16 out of a possible 18 ribbons; at San Diego, 13 out of a possible 15 ribbons, 3 silver cups, etc. Eggs from Standard Rocks, $1.50 per 12, $10 per 100. WM. M. HUMPHREYS, 241 N. Union Ave., Los Angeles

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One of the Largest, Yarded, Exclusive White Leghorn Poultry Farms on the Coast
Can furnish eggs for hatching from two grades as follows:
The First-Grade Pens are formed from birds in their second season, only the choice specimens being selected. These are the prolific layers with good carriage and color and strong points throughout.
Price per setting of 15 eggs, $2.00; 100 eggs, $7.00.
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Choice Breeding Hens For Sale. Address
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(INCORPORATED)
A. E. Bourke, Pres. Phone Black 1211

PETALUMA, CAL., JAN. 1, 1906.
TO WHOM IT MAY CONCERN;

As the chicken raising season is at hand, we beg leave to call your attention to a few of our specialties.

Do you need an Incubator? Our machines are fully guaranteed and have proven themselves unsurpassed wherever used.

Do you need Brooders? We manufacture just what you want; fully guaranteed, made of the finest material and of the best possible workmanship, and, above all, a practical machine which saves the purchaser money, time and labor.

Do you need Poultry Supplies of any kind? We manufacture a line of Supplies the use of which makes Poultry Raising not only profitable, but a pleasure. Among our specialties are:

Our Water Fountains; our Self Feeder for Chicks, our Feed Troughs, large and small; our Lamp Fillers.

Our convenient Must Hatch Nest Boxes; our safe and sure Must Hatch Insecticide, our sanitary Must Hatch Disinfectant, our sure death Must Hatch Lice Exterminator, our Poultry Compound, a fine Spring and Fall Tonic.

In connection with the above list, all of our own manufacture, we can also furnish the following, which are indispensable to the Poultrymen:

The No. 128 Clover Cutter, the Enterprise Bone Mill, the Ohio Feed Cutter, the Banner Root Cutter, the Enterprise Feed Chopper, the Ideal Duplex Feed Mill, and the Farmer's Boiler.

Do you wish to make your own Incubator or Brooder? We can furnish you all the necessary parts for making an Incubator or Brooder, also plans for the best and most practical Poultry Houses.

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We can also supply White Leghorn hatching egg in quantities desired. If you have not already received our catalogue, write for Catalogue B, and you will find therein a more detailed description with prices, etc., of the above.

Hoping to hear from you in the near future, we are,
Yours Very Respectfully,
MUST HATCH INCUBATOR CO.

Veterinary

BY DR. W. J. OLIVER,
318 East Second St., Los Angeles

To the end that this department may be made as valuable to the subscribers as possible, we ask observance of the following: Be sure to state in full the history of the case, location of the disease and the conditions under which the animal has been kept just before and since the disease appeared. Give your name and address, which will not appear in the paper if you so request. No charge whatever is made for such questions as are answered through the colums of the Cultivator, but when an immediate mail answer is wished Dr. Oliver asks an additional fee of $1.00 and will give immediate attention and reply by mail. In such case write Dr. W. J. Oliver, 318 E. Second St., Los Angeles, Cal.

Questions should be in by Monday to be answered in the following Friday's paper.

INDIGESTIBLE FEED

A year ago a neighbor of mine lost two horses. They had been turned out on filaree pasture. When taken up they became very ill with colic and could not pass anything. Both died, and when cut open a very hard ball of filaree grass was found in the intestines. The doctor said that killed them. Now there were many other horses and cows on the same pasture and none of them were affected. This year the same man turned another horse on the same pasture, only the filaree had not yet come above the ground, but there were horse beans growing. This horse died with the same symptoms and when cut open a hard ball of horse bean pods was found in the intestines. Now many people feed the horse bean straw and pods, and it does not hurt them. When the first two horses died there were no horse beans in the field. But the symptoms were so much alike that I think there must have been a common cause. There is an apple orchard in this field and it has been sprayed every season with arsenic, Paris green, etc. Now, if a lump of this were left in some spot in the field and the horses had eaten a little, would that cause the above symptoms and death?

Those horses died from infraction of the bowels caused by the filaree. In green, succulent state this is good feed, but after a time as it matures, the filaree becomes woody and indigestible, particularly to horses turned out when the grass is in that stage, while other horses that have been feeding on this pasture for some time before are not so likely to be affected. The horse that died from infraction of bean pods had not been accustomed to the feed. This caused indigestion impaction. If the arsenic or Paris green had been the cause, your symptoms would have been quite different—diarrhoea instead of impaction.—Dr. Oliver.

* * *

DISTEMPER

Some months ago many horses in this locality had distemper. Their throats became very sore and they could eat very little and could swallow no water at all for some days; could not get their heads below the level of their shoulders. After some days lumps broke out on their throats or near their ears. They coughed some. Some horses died. Is this the real distemper and what causes it.?

This is the real distemper. Answer No. 5 applies to this case.

* * *

STRANGLES

Several of my horses have lately been troubled with a lump on their chest, or just between front legs, or under body a little back of fore legs. It grows very large and is hard and very feverish. Seems to move up the neck a little. When lanced a great deal of matter runs out and the horse gets better. They are very stiff in front legs and look very sick before the lump is lanced. What is the cause?

Those horses had what is known as irregular strangles and should have good care and mashes kept warm and in well ventilated stable. Apply a stimulating liniment to swollen lumps and lance as soon as they soften up. This disease is peculiar to horses.

* * *

CHRONIC DIARRHOEA

Please give remedy for chronic diarrhoea in a horse. He has had it for a couple of years.

Have's horse teeth examined and dressed. You have chronic indigestion from not properly masticating the food. Mix dry bran and rolled barley, one third bran and two thirds barley.

* * *

WORMS IN HORSES

Please give a remedy for worms in horses.

Pulverized copperas is good for large round worms.

* * *

BAD TEETH

I have a horse which has a fever rash all around his lips. He is rather thin and does not eat well, although usually a great eater.—Watsonville.

Have his teeth examined. Give a spoonful of nitrate potash twice a day. Apply solution of carbonate of soda to rash.

* * *

WORMS

Editor Cultivator—I had a Scotch Collie puppy about three months old. Fed him bread, skim milk and some meat. He had a spasm or fit just as if he were poisoned. We cut his tail and gave him milk and butter, and he got better, and drank a dish of milk without being forced, when suddenly he fell over dead, about three-quarters of an hour after the spasm. What do you think caused his death? H. K.—Watsonville.

The cause of the puppy's death, I believe, was worms—Threadworm (Filaria Immitis.) These worms are found in the heart of the dog. Dogs with this disease often die suddenly while others linger and have excruciating pain.

CRAPES, CREENS AND LOQUATS

Continued from page 148

large while rye, barley and oats grow the rankest kind. Any information in any form I will be glad to pay you for. Is rape grown for plowing under and is it a nitrogen gatherer and a free grower?—M. C. Cole, Santa Ana.

You are asking for something that is hard to give when you ask for a grape that is disease resistant. Before he Anaheim disease struck the country the grape was considered remarkably free from diseases of a serious nature. We do not know of any variety that will pay better than Purple Cornichon in your part of the country on heavy land. The Advance loquat has given good returns in your section we are told. It is the largest and handsomest variety now on the market.

Rape is not a nitrogen gatherer but it is a rank grower on heavy soil. Yellow melilot is a rank grower and a good nitrogen gatherer. It is commonly known as sweet clover. It has a slight resemblance to alfalfa but has a yellow bloom and in an annual. March is the time when this plant gets in its best growth. Bush cowpeas will mature in 60 to 90 days. If planted late in May you would get quite a growth.

* * *

ASPARAGUS ON WET LAND.

Editor Cultivator: Will you please tell me through the columns of the Cultivator, whether or not sub-irrigated heavy sandy loam will be suitable for asparagus? The land is lying low and in irrigating season the water is three or four inches below the surface.

How far would you set the plants and how far apart in the rows, also, how deep would you set the plants and what is the best variety of asparagus? If the land is not suited for growing asparagus, what kind of vegetable is it best suited for?—J. G. F., Fresno.

Asparagus should not be planted with the rows closer than six feet and the plants should not be closer than three feet apart in the rows. The crowns of the plants should be at least eight inches below the level of the surface. There are two reasons for this. When it is desired to cut white asparagus, it should not be cut less than three or four inches above the crown as it is always tough that far from the crown. Should the plants be set higher, it will require making the ridges higher which will necessitate removing too much from the roots and incur extra expense. Another reason is that, a shallow plowing just before the asparagus starts will destroy all the weeds and put the land in fine condition for the season's cultivation. This shallow plowing will cut off all the old stubs that are left from the past seasons growth. The crowns of the plants will be out of reach of the plow and the buds will escape injury. It must be remembered that asparagus grows out of the ground, that is, keeps adding to its height.

Your land does seem rather wet for most any kind of a crop, the wettest time being in the summer, but we do not know of any crop that will stand wet feet better than asparagus, though for early asparagus the water should be with held after the harvest season in order that the roots and crowns may have a rest and produce large shoots at the beginning of the season. If asparagus is allowed to grow and send up shoots all through the summer, the shoots will always be smaller than if it has a rest.

We would think that such wet land would produce good French artichokes. We would feel our way with this industry though, as the demand may be easily supplied. Judging from the prices they bring in the markets at the present time, they ought to pay well.

Conover's Colossal is the variety usually grown.

* * *

CUTTING THE EUCALYPTUS TREES.

Editor Cultivator: I would like to know the best time to cut Eucalyptus trees for wood so as to have the least risk of injury, that they may sprout and produce new tops with the least loss from dead stumps. My trees are mostly Blue Gums?—Subscriber.

The best time at which to cut Eucalyptus trees so as to insure the best renewal of tops, has not been definitely determined, but experience has taught us that Blue Gums cut away any time from December till March will send out plenty of shoots.

* * *

GREEN FEED IN THE WALNUT GROVE.

Editor Cultivator: Please tell me through your columns, what I can sow between my walnut trees which are on sandy loam soil, that will do the least injury and yet make the quickest and best feed for poultry. Is wheat good or could you suggest something better?—I. G. W., Tropico.

We would not plant wheat in any kind of an orchard. Nothing will sap the soil as fast as grain or grass. Half the area planted to alfalfa will give more and better feed, require no more water to keep the moisture supply up and will enrich the soil. In your climate, you will have green feed summer and winter.

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Queries and Replies

GROWING LETTUCE.

Editor Cultivator: Please tell me how to raise lettuce in the home garden? How can it be made to form crisp tender heads.

The soil is sandy and being an interior town, of course is hot and dry through the summer. Any information concerning the growing of our most valuable salad plant will be gratefully received by—J. H. S., Colton.

We have found that in addition to a loose friable soil, it is especially desirable to spade and work over the ground deeply for summer lettuce, keeping plants well watered, free from weeds, and the surface loose. Prize Head is especially recommended for sections like yours, but last year, near Los Angeles the writer had perfect mid-summer lettuce from both Black Seeded Simpson, and Denver Market.

GRAFTING WALNUTS.

I have planted around my place at 40 feet spaces eastern black walnuts. I put out some two years ago and some last year, nuts planted where I wish trees to grow, some are three feet high. When is the best time to graft or bud and which is most desirable. I wish to put the Franquette stock on.—G. H., Santa Rosa.

Grafting is usually done on one year old trees, but if they are only three feet high at two years old they can be successfully grafted at that age. The best time to graft walnut trees is just before the new growth starts. The scions sould be cut now and laid away in a cool place, packed in sand that is damp, but not wet, until wanted for use. Cleft grafting has been most successful, but if care is taken to have the inner barks meet and the graft is protected from the air as soon as placed in position by having a coating of warm wax, there is no reason why other styles will not be successful.

If the grafts in any of the stock should fail to grow let a shoot come in which can be budded in the last of August or first of September.

WITHOUT IRRIGATION.

Can you raise Egyptian corn, Kaffir corn, sorghum, potatoes, melons, or sugar beets and beets for feeding stock, on sandy ground like there is about Fresno, just from the moisture from the natural source, without any irrigation? How and when should each be planted.—A Subscriber, Fresno.

You may grow potatoes, melons and beets, without irrigation, but you should have water for the corn crops. If your soil is rather dry it may be best to irrigate potatoes, but if you do so let it be "early in the game," never after the first blossom shows.

SHEEP ON ALFALFA.

Editor Cultivator: How do sheep do on alfalfa and how many could be kept to the acre?—H. T., Turlock.

We do not know how many sheep an acre of alfalfa will keep because such feeding is not practiced. The sheep would do well much longer than the alfalfa, for they quickly kill it out.

A GOOD INCUBATOR.

The new management of the Stockton Incubator Co., are putting out a machine which is giving some great hatches. This machine has had many years trial with California poultry men and only a few months ago the writer was told by the poultryman in the central part of the State that while he had two other makes alongside, the old Stockton hatched healthy chicks to equal any of them.

Messrs. Marshall and Barnes, the new managers are pushers and are getting their machines up to look well as well to give good hatches. These machines were awarded a silver medal at the Buffalo Exposition against the strongest competition.

C. Scheerer & Co., Los Angeles, are advertising their justly celebrated Vulcanite Roofing in the Cultivator and will be pleased to send samples and price list on application. Write them, mentioning Cultivator.

RELATION OF HANDLINC TO KEEPINC OF FRUIT.

(Continued from first page.)

ence of bruising the orange on its keeping quality. The orange is cut from the tree with a pair of shears or clippers. The orange and lemon crop of California amounts to 30,000 carloads annually. The losses from decay in transit are estimated at half a million dollars annually. These losses have usually been ascribed to the conditions in the refrigerator car service. We are not prepared to say what proportion of the losses in the orange are due to the conditions in transit—a considerable amount without question—but it is reasonably certain that the handling of the fruit before it is packed, the character of the package in which it is shipped, and the conditions ni which it is grown are important factors aside from the conditions in transit that influence the shipping and keeping qualities.

It is exceptional to find a lot of oranges with less than 15 to 20 per cent of the fruit showing mechanical skin injuries by the clippers in severing the oranges from the tree. It is not unusual to find 20 to 30 per cent injured in this manner. Other injuries occur from stem punctures, and still others from the machinery used in washing, brushing, weighing, elevating and sizing the fruit. During the early part of the season, that is, in January and February, when the weather in California and in the transcontinental trip is cool and the fruit is immature, the decay in transit is not a serious commercial factor. But later in the season, in March, April and May, when the fruit is riper and the weather warms up in California, the molds start into growth easily in the bruised oranges and continue to develop in transit, especially in the center of the packages where the fruit is cooled last, and in the warmer parts of the car. The decay in imperfect fruit in transit is determined largely by the weather conditions at the shipping point, and the temperature in the car during the first few days of the trip. When the weather is unusually warm and moist, the fruit enters the car in a hot condition and the molds grow with unusual vigor. But when the fruit enters the car cool, it may be refrigerated sufficiently before the molds start into growth.

At the same time, oranges in perfect condition physically seldom rot in transit even in warm weather. It is a question whether oranges would require refrigeration if the fruit was handled so as to prevent the rupturing of the skin. It is the practice of the best lemon growers on the Pacific Coast to ship lemons in the hottest summer weather under ventilation. The rots in transit in oranges can be reduced primarily by the grower and packer in the same way that decays in apples in cold storage are to be reduced. Perfect fruit is the keystone on which successful fruit keeping is based. Quick refrigeration is of equal importance in holding back the development of decay in fruits that are made susceptible by rough handling.

There is another phase of the question that needs to be touched upon as it throws some light on a common source of trouble in shipping and storing fruit. There is a wide variation in the care with which different pickers handle fruit. Of two orange pickers working side by side, one may not injure more than 2 per cent of the fruit while the other injures at least one-half of the fruit. There is a wide variation in the fruit of different growers taken as a whole. One lot of oranges in a packing house may show 5 per cent of injury, another 10 per cent, and a third 30 per cent. Similar variations will be found in peaches, apples and in other fruits handled by different pickers and growers. When the fruit of a community is pooled, it often happens that a car on arrival in New York shows an average of 10 per cent decay, while another car the following day of the same grade has developed 25 per cent. The shipper is perplexed by the report and is likely to attribute it to a false report on the part of the inspector. Such differences, however, are logical when the wide variation in the conditions of the fruit or different pickers and growers is taken into consideration. The first car may have come from a grower who delivers the fruit to the packing house with a minimum of injury; the second from one who handles it with unusual roughness. There may be an equally wide variation in the different boxes of the same grade, caused by the variation in the care of the different pickers. In the same way, an apple dealer who stores twenty lots of Baldwin apples in one storage room may expect a wide variation in the keeping of the different lots if the fruit has been picked and packed by different growers, or if there has been a variation in the length of time that elapses between the picking and the storing.

The conditions under which the fruit is grown, such as the character of the soil, the age of the trees, the method of orchard management, the geographical location, undoubtedly exert a wide influence on the shipping and keeping qualities of fruit. On this branch of the subject there is little definite information. We know that the texture and the quality of the fruit is influenced widely by the cultural conditions, and it is probable that the susceptibility to decay, the rapidity of ripening and other factors that influence keeping quality are likewise modified. The Bureau is carrying on investigations along this line.

There has been a gradual improvement in the methods of fruit handling and in the methods and facilities in transportation. No other country begins to handle fruit as carefully as our own. No other country can approach the refrigerator car service, or the fruit transportation service of the United States. None other has developed the fruit business to the extent of the United States. But the industry is in its infancy. The domestic and foreign markets are capable of enormous development. The extension of the industry will depend on the improvement in methods by which the fruit grower, the handler, the transportation and the warehousemen increases the distribution of the fruit over wide areas in sound condition.

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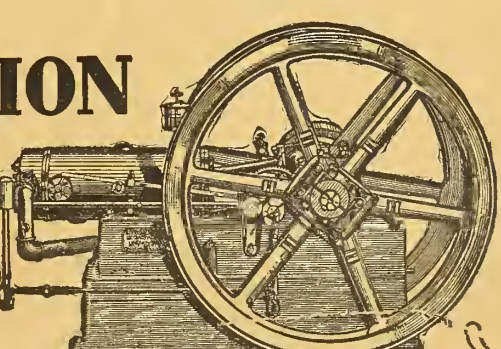

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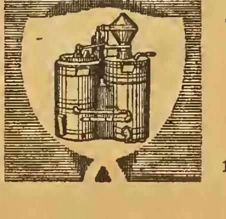

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Household Department

I CAN CLIMB.

At my needlework
I'm sitting
All intent on silken rose,
While my grayhaired dragon, knitting
Glares with spectacles on nose.
Locked and barred the garden gate,
Safely hid the garden key;
Tranquilly I bear my fate—
Thought is free.

In a trice today is banished,
Silken rose and dragon fade,
Prison bars and walls have vanished,
Once again I tread the glade.
Then forgot are space and time,
Fears and tremblings have flown—
For it's understood that I'm
Not alone.

So, although they guard securely,
Watch my face with jealous stare;
Though my needles fly demurely,
Yet my heart is light as air.
Little need to chafe and fret,
Nearer draws the magic time,
They have locked the gate, and yet—
I can climb.

Dr. Smile's Story.

Dr. Smile squeezed himself into the largest chair in the room and rubbed his fat hands preparatory to relating an experience. "Did I ever tell you about the people who were too good?" he asked. "Well, they formed one of those strange colonies which start to make what they think will be an earthly paradise. In this particular Eden the inhabitants were too modest to leave any record of themselves. I am, however, entitled to make a post-mortem statement, since I was present at the death of the community and ministered to it in its last moments.

"One day a tall, bearded farmer came in his wagon to get me to attend a case in his town. As I was a young practitioner without any practice I was delighted to respond. I was slightly troubled when the farmer asked me what my charge would be for attending a patient two weeks. I named a modest sum, and asked if he thought that excessive. "No," he said, "I think that is too little. Let us double the amount. 'And,' he continued, counting over some bills, 'we pay in advance.' "In that wonderful community, so I was told, they actually sent subscriptions to farm papers several years in advance."

"As we drew near the town our road became like a paved avenue, with never a stone or a mud hole in it and never a weed beside it. The fences in exactly regular lines, had no boards missing and were neatly painted. As we entered the town the houses seemed unnatural; the white paint was all unspotted; the windows everywhere had evidently just been cleaned, the door knobs were all highly polished, even the shingles on the roofs bore evidence of having been scrubbed recently. The grass in the dooryards must have been raked every day, the flower gardens could not muster a weed and the barns were just like the houses. The neatness of everything was growing painfully oppressive to me; I intimated as much to my companion.

"Cleanliness is next to godliness,' he replied. 'As we bathe twice a day and wash our clothing every alternate day we feel that our houses and barns should receive some attention.'

"Who makes such rules as these and who is able to enforce them on a whole town like this?' I asked.

"Said he: 'We need no rules. All of us agree about everything.'

"But,' said I 'what town officers could keep a road like this? Who is the head of your town?"

"We have no head," he answered. 'We have had elections, but no one was willing to be put in authority over his fellows or to take the salary of an office."

"Have you no physician of your own?" I asked, feeling hopes for the future.

"We had one," said he. "A perfect man. But for three months, when several of our people were down with one thing or another, he visited his patients all day without stopping for meals, and he sat up with the worst cases every night until one day the dear man dropped dead himself. He was a great example to our people."

"I found that my patient was the one black sheep in the flock. He was a fat, healthy fellow, who was thoroughly lazy. The good people, out of pure charity, forced themselves to believe that he was sick rather than indolent, and instead of tarring and feathering him as any other town might have done they paid a physician to attend him. He took me into his confidence at once; for he felt that his position was secure. He invited me to sit down with him to a sumptuous meal and related his history unblushingly.

"It might be a strain on your credulity to give further examples of the goodness of these people; how they sneaked up in the night to cut cordwood for their neighbors or dig potatoes for them; how they worked so hard that there seemed a likelihood of most of them dying of overwork in a few years; how they kept their hogs so clean that the animals all died young.

"Well, the end came rather unexpectedly. After I had visited my patient regularly for five days I found that the annual meeting of the town was to be held one evening in the hall. My patient said he might arouse himself enough to attend the meeting if I desired to go with him.

"Accordingly we went, sitting comfortably in the rear of the room. My companion prepared himself for a nap. The meeting opened with a long invocation; it grew so long that I nodded and was almost ready to follow the example of my patient.

"But in the midst of the prayer—perhaps at the end of twenty minutes—I noticed the odor of smoke and thought I heard the crackling of flames. I glanced about the room hastily. Except myself and my patient, who was snoring softly, every person had his head bowed and his eyes closed tightly. I leaped up with a shout, for there over the speaker's head the smoke was rolling in volumes and the woodwork was already afire.

"Then arose an unexpected debate. The men began shouting to one another to stand back and let the women and children out first; and thereupon the women and children, even to the little ones, not to be outdone, declared they would go last. Next followed a scene of confusion; the men argued with the women individually and pushed them toward the stairs, and the women answered still more vehemently and pulled the men toward the way of escape.

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Is quite essential to every business office—it gives the appearance of strength and stability which at once gains confidence and greatly assists in bringing in and holding valuable business. The desk is the most important item in any office, and is the one thing you should be careful in selecting. We have just received another shipment of the **Celebrated Standard Office Desks** and now have them on our floor for your inspection. You will find in these desks many improvements and new arrangements of interiors that are worthy of your attention. The Standard desks are the best desks on the market today. They are made of the finest selected woods and are perfect in arrangement and finish. We are sole agents in this territory. **Office Chairs**—We have a nice line of desk chairs for you to choose from, all styles and finishes, and in the best woods. If you are in need of anything in the office furniture line you should see our stock.

"All Goods Marked in Plain Figures."

NILES PEASE FURNITURE CO.
439-441-443 SO. SPRING ST., LOS ANGELES, CAL.

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Capital and Surplus, $630,000. Total Resources, $14,000,000.00

4% Interest Paid on Term Deposits. Write for Booklet "A" on banking by mail, also rain-fall chart.

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Santa Fe

COLONIST RATES TO CALIFORNIA

Will be in effect every day, Feb. 15 to April 7, and Sept. 15 to Oct. 31, 1906, from all points in the east and south.

Following are a few:

Chicago	$33.00	Kansas City & Leovenworth	$25.00
St. Louis	30.00	St. Joseph & Atchison	25.00
Galveston	26.45	Council Bluffs & Omaha	25.00
Dallas, Houston and Fort Worth			25.00
Nearlo all points in Kansas, Oklahoma and Indian Territory			25.00

Colonist rates are also in effect from all points east of Chicago and south of the Ohio river.

Santa Fe Agents in California will take deposits of money to cover price of tickets, which will be promptly furnished to passengers at any point from which these rates are in effect.

California illustrated literature mailed free to any address or may be had from Santa Fe representatives.

Tourist leeping Car Lines

Colonist tickets are honored in tourist sleeping cars which run via the Santa Fe to Los Angeles and San Francisco.

"Then I remembered my patient. I shook him till he woke up. 'Are you as obstinate as these people about being saved?" I asked.

"Me?" said he, seizing me by the arm. 'Oh, Lord, get me out of here quick! All the gunpowder in town is just now stored in the basement. Help me out quick.'

"I started with him for the stairs. But the smoke was so thick and the confusion so great that I could not find them. At length I found a window and climbed out in order to pull my patient out after me. His head and his shoulders came through all right; then he stuck and with all my pulling and his kicking and sputtering he remained fast.

"Drop to the ground," he cried, "and run to the nearest house. Bring the ax you will find at the wood pile and come and cut this window frame out for me."

"I dropped to the ground and ran as fast as I could to the nearest house. Just as I reached it there was a great explosion. I looked about to find that the hall and all the people had been blown to atoms and only a great hole in the ground was left."—Chicago Tribune.

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Also Long Beach Factory 15th and Alameda Sts., Los Angeles

The Farmer's Wife
And the Telephone

When considering the advantages of a telephone on the farm, and whether or not to buy one, don't forget the wife. Of course the telephone is a "time-saver" for the farmer, it removes the necessity for so many trips to town, and gives him more time for work, but above all don't overlook the companionship it will afford the wife during the long day when the men-folks are away. It will be a protector to her and a messenger if occasion compels her to call for aid or assistance in a hurry. It will relieve the dry monotony of many a dreary day and drive lonesomeness away. The story is told of a line inspector, out in Illinois, who one day found a woman rocking and knitting, with the receiver of her telephone tied onto her head, so that she might hear all the conversation that passed over the line. That poor woman was not "nibby," she was just lonesome. Hundreds of farmers' wives know what it means to be lonesome — to yearn for companionship. Think what a relief the telephone will be to your wife, what a sense of security it will give her just to feel that she has the entire neighborhood right at her elbow when she wants them.

Stromberg-Carlson Telephones

are best for the farm, because they are always in order. They are made right, especially for such service, and they stay right. You can buy cheaper telephones, but they will cost you more in the end. They will be out of fix most of the time and will require constant attention to keep them "working" at all. To make your farm line both practical and profitable, don't experiment with cheap telephones. Buy only the best. We would like to help you to decide which is best; to do that, let us send you our new book, "How the Telephone Helps the Farmer," in which we illustrate and describe the process of making a farm telephone from beginning to finish, taking up particularly the most important or essential parts and showing how we make them and how the cheap fellows make theirs. This will be an object lesson to you that may save you a good many dollars and no little disappointment. It tells how to interest your neighbors in building a line, and will furnish valuable information you cannot afford to be without. It's free—write for it today. A postal will do; just say, "Send me 71-N," and it will come by return mail.

STROMBERG-CARLSON TEL. MFG. CO.
Rochester, N. Y. Chicago, Ill.

Cookery Recipes

NEAPOLITAN CORNSTARCH PUDDING.

Beat the whites of three or four eggs to a stiff froth. Dissolve two tablespoonfuls of conrstarch in a little milk and put it on the fire. When it begins to boil add the dissolved cornstarch. Stir until it becomes a smooth paste and add the whites of the eggs, letting it remain in the double boiler but off the fire, to cook them. Divide it into three parts, leaving one in the custard kettle. To this add an ounce of melted chocolate and a handful of small seedless raisins. Flavor part with vanilla and grated cocoanut. Color the third with green vegetable coloring and add pistachio flavoring, and a sprinkling of chopped pistachios or almonds. As fast as each is mixed turn into a round mold with straight up and down sides. Another pretty combination is to make a third of it coffee, in which case the coffee part should be made separately, taking a third of the other ingredients. Boil up the milk with a heaping tablespoonful of fresh coffee, strain through a cloth, and proceed as before. With this use chocolate, and have the middle layer pink, coloring it and flavoring with sherry. The small raisins are also good in the coffee layer, in which case use thirty sliced almonds in the chocolate and a few cut cherries in the pink. This is an inexpensive pudding to make, is delicious even without adding the fruits or nuts, and makes a showy desert surrounded with a circle of whipped cream.

* * *

Steamed Pudding.—Two cups sweet milk, 1 teaspoon soda, 1 cup molasses, 1 teaspoon cinnamon, 1 1-2 cups chopped suet, 1 teaspoon salt. Thicken with flour, not very stiff and steam 2 hours. Eat with milk, sugar and nutmeg.

* * *

Molasses Cake.—One cup molasses, 1 teaspoon ginger, 1 cup hot water, 1 teaspoon salt, 3 cups flour, 1 teaspoon soda, dissolved in hot water, 2 tablespoons melted butter.

* * *

Sauce for Salads and Cold Meats—Beat well four eggs, leaving out the whites. Mix together one tablespoonful of mustard, one of sugar, teaspoonful of salt, half a teaspoonful of cayenne pepper and a cup of vinegar. Turn into a pan and set the pan into boiling water. Cook until the consistency of thick cream. This, well bottled, will keep in a cool place sometime.

* * *

Celery Vinegar.—One quart of fresh celery, chopped fine, or a quarter of a pound of celery seed; one quart of good apple vinegar, one tablespoonful of salt and one of white sugar.

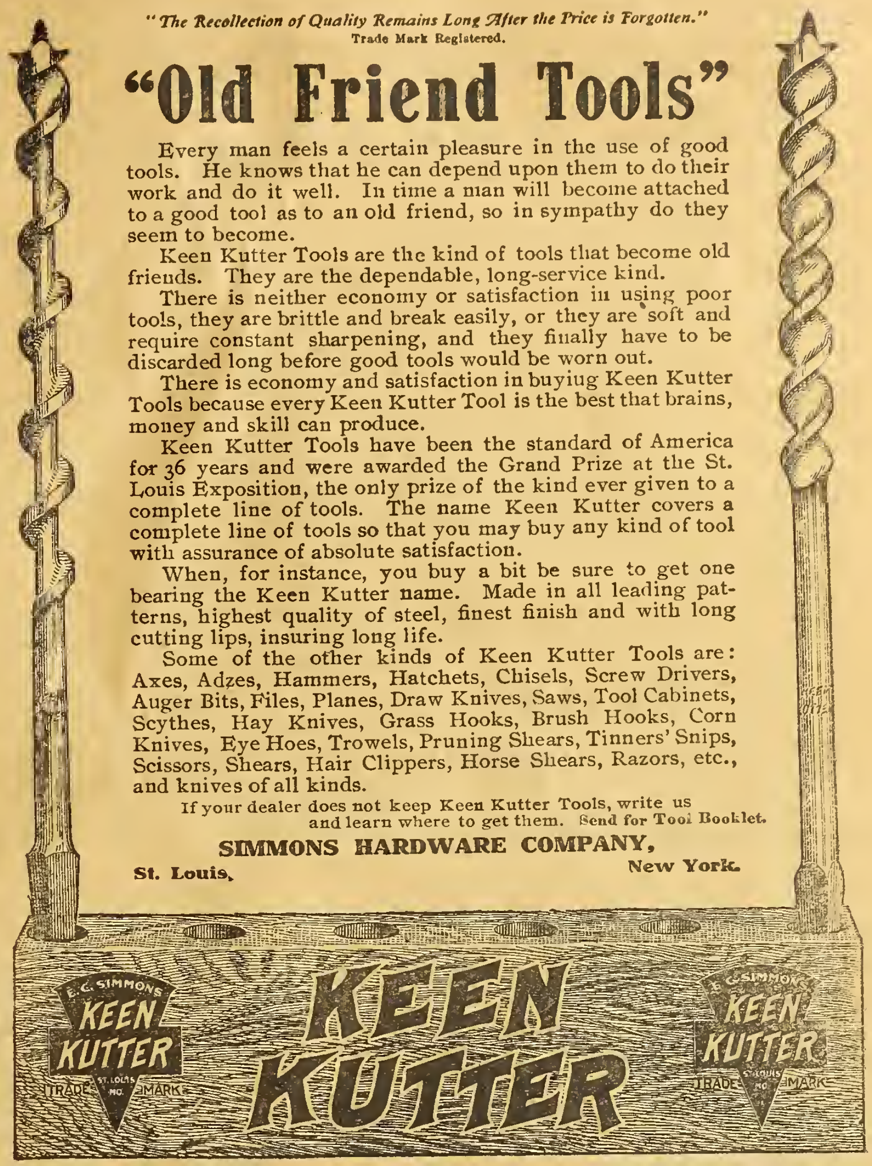
Scraps by the Literary Farmer—I am not so old that I require to be chloroformed, or otherwise to be disposed of for the benefit of that much-talked section, the general public, but my active days of farming are over. My boys allow I know something about the points of an animal, but consider me useless when it comes to filling a silo or milking a cow even. So I take life easy and retain their respect by keeping in touch with the latest improvement in scientific farming and agricultural experimentations. Some of these thnigs that interest me may interest your readers, and from time to time I shall send you a few notes.

Bacon.—Our bacon is poor and will not be any better so long as the packing trust do as they please. The Canadians are dissatisfied with the quality of theirs, and have been comparing it with the Danish. The latter is, they say, of superior quality, and the bulk of it comes from cross-breed animals, fed largely on barley. Corn was not much used.

* * *

Weeds.—Spraying weeds with blue stone, one pound to the 5 gallons of water has only proved effectual in killing mustard. All the others are not affected.

"In the spring the husband fools
around with rake and spade and hoe,
And plants and sows a lot of seeds
that never, never grow."



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Keen Kutter Tools are the kind of tools that become old friends. They are the dependable, long-service kind.

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Keen Kutter Tools have been the standard of America for 36 years and were awarded the Grand Prize at the St. Louis Exposition, the only prize of the kind ever given to a complete line of tools. The name Keen Kutter covers a complete line of tools so that you may buy any kind of tool with assurance of absolute satisfaction.

When, for instance, you buy a bit be sure to get one bearing the Keen Kutter name. Made in all leading patterns, highest quality of steel, finest finish and with long cutting lips, insuring long life.

Some of the other kinds of Keen Kutter Tools are: Axes, Adzes, Hammers, Hatchets, Chisels, Screw Drivers, Auger Bits, Files, Planes, Draw Knives, Saws, Tool Cabinets, Scythes, Hay Knives, Grass Hooks, Brush Hooks, Corn Knives, Eye Hoes, Trowels, Pruning Shears, Tinners' Snips, Scissors, Shears, Hair Clippers, Horse Shears, Razors, etc., and knives of all kinds.

If your dealer does not keep Keen Kutter Tools, write us and learn where to get them. Send for Tool Booklet.

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East and West

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Los Angeles, Cal.

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"Discontinue my add. It has been the means of selling all of my plants; also a good many of my neighbors"—A. E. Harrington, Los Angeles.

"You may discontinue my add in the Cultivator, as I will have no more eggs to sell for some time to come."—F. L. Hogue, Carpenteria.

The Cultivator gives results—and that is the test of circulation. We have but one favor to ask—try the paper once and you will remain a permanent advertiser with it.

IT'S PENNY WISE

Policy to set out a good tree, costing good money and then let the sun burn the bark, or the rabbits gnaw it when for $1.00 an acre you can get Yucca Tree Protectors that are practically indestructible. Write for free sample of the wrap. Yucca Mfg. Co., 2124 Willow St., Los Angeles.

Sole Agency for Pacific Coast for the

SURE-GO Gasoline Engine

Manufactured by the Wogaman Mfg. Co. Greenville, O.

The Sure-Go is of the latest and most improved design, has fewer working parts than any other Engine on the market, therefore lasts longer. So simple is its construction that any child can operate it. It can be used in any work as it rests upon skids, can be easily moved from place to place, thus of great value to the ranchman or farmer. This Engine is four cycle, four horse power capacity, and can be delivered at a price that will astonish you, it is so cheap.

Anyone interested in Gasoline Engines will find something to their advantage in labor saving and money saving, by communicating by letter or in person.

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Sunny Sinaloa

The "Paradise of the Pacific." Revenue-producing lands at "next to nothing" prices in Sinaloa, Mexico. Six railroads building; ten great rivers; fine seaports; virgin opportunities for "live" people. Call or write for information.

Sinaloa Land Co.,
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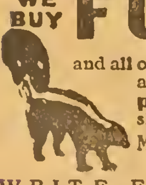

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McMILLAN FUR & WOOL CO.
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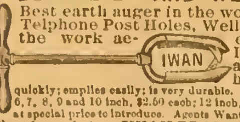
WRITE FOR CIRCULARS



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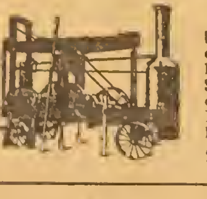
Best earth auger in the world. For Fence and Telphone Post Holes, Wells, etc. Three times the work accomplished with an Iwan Auger than with any other. Makes hole smoothly and quickly; empties easily; is very durable. Used by U. S. Gov't. 3, 4, 5, 6, 7, 8, 9 and 10 inch, $2.50 each; 12 inch, $6.00; 14 inch, $7.50. Sample at special price to introduce. Agents Wanted. Inquire of dealers or write direct for particulars. IWAN BROS., Box. A Streator, ILL.



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13 Chestnut St., Waterloo, Ia

Pacific Coast Mines Bureau

MINING INVESTMENTS

We are fiscal agents for the Bluebell Gold Mining and Milling Co. of California; Tonopah-Wall Street Mining Co. and Eldorado-Nevada Mining Co.

421 CHAMBER OF COMMERCE
LOS ANGELES, CAL.

The Produce Markets

Los Angeles Markets.

Los Angeles, Feb. 15, 1906.

Butter prices still hold up, but dealers confidently predict a slump during the coming week, owing to the continued heavy rains and expected receipts from the coast counties.

The egg market has slumped badly and a further decline is predicted. Sales continue brisk, however, and no large stocks for immediate use are being accumulated.

Vegetables are in fair supply. with little change in prices.

Fruit scarce.

Butter.

B. of T. Creamery, per roll	.70
Valley Creamery, fancy	.70
Valley Storage	.60

Cheese.

Cal. 3-lb hand	19½
Cal. Young America	18½
California Anchor	17½
Northern	16@17
Domestic Swiss	19@20
Imported do	26½@27

Eggs.

Eggs, Fresh Ranch	18

Poultry.

Fryers, 2 1-2 lbs.	18
Broilers, under 2 lbs., per lb.	18
Young Roosters, per lb.	17
Hens, per lb.	15
Ducks, per lb.	14@15
Geese	14@15
Turkeys	19

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock:

Hogs, 200 lbs.	6¼
Prime Steers	4
Cows	3¼
Calves, cwt	4.50
Sheep, ewes, per head	5.00
Lambs, per head	3.25
Wethers	5½

Potatoes.

Northern, per sack	$1.50@1.75
Locals, per cwt	1.10@1.25
Sweets, white, per cwt.	1.75@2.00
Sweets, yellow, cwt.	2.00

Vegetables.

Onions, Australian Brown, cwt.	1.75@2.00
Onions, yellow, cwt.	1.75
Garlic	7@10
Cabbage, per sack	35@50
Cauliflower, per doz.	40@60
Lettuce, per doz.	15@25
Bell Peppers	15
Chili Peppers, green	6½@8
Cucumbers, per doz.	60@2.50
Radishes, per doz.	15
Lima Beans	10@15
String Beans	15@17
Beets	40
Green Onions, doz. bunches	20@25
Carrots, doz. bunches	40
Turnips, doz. bunches	30@40
Celery, per doz.	35@40
Peas, per lb.	4@4½
Egg Plant	8@10
Tomatoes, local	75@1.00
Parsley, per. doz. bunches	60
Hubbard Squash, per lb.	1½

Citrus Fruits.

Lemons, standard	1.25
Lemons, choice	1.50
Lemons, fancy	2.00@2.25
Grapefruit	1.75@3.00
Navels	1.50@1.75

Fresh Fruits.

Apples, Bellefleur	1.35@1.50
Fall Pippins	1.00@1.10
Red Pearmain	1.00@1.25
Strawberries, per box	25
Guavas, per basket	3½@4
Pears, Winter Nellis, per lb.	4½@5
Casaba Melons, large crates	2.25@2.50

Dried Fruit.

Apples, evaporated, ex ch, 9; ch, 8½.

Apricots, ex ch, 11; fy, 8½; ch, 7½.

Peaches, fy, 8½@10½; ch, 7½@8.

Santa Clara Prunes, 30-40, 8c, 40-50, 7; 50-60, 6c; 60-70, 5½.

Loose Muscatel Raisins, 2-crown 4½; 3-crown, 5; 4-crown, 6.

Beans, Dried.

Limas	5.00@5.50
Pinks, fancy	2.50@2.65
Lady Washington	3.00@3.10
Small White	3.50@3.75
Black Eyes	5.50@6.00

Nuts.

Walnuts, No. 1, soft shell	14½
Do, No. 2	8@10
Do. No. 1, hard shells	12
Do. No. 2, hard shells	10
Almonds, paper shells,	16@17
Almonds, soft shell	14
Peanuts, California	6@7½

Honey.

Honey, comb frames	14@15
White, strained, per lb.	6½@7
Light Amber	6
Amber	5
Beeswax	27

Hay.

Barley	12.00@16.00
Alfalfa, local	14.00@16.00
Alfalfa, Northern	13.00@14.00
Wheat	14.50@16.00
Tame Oat	14.50@16.00

Grain.

Selling prices of mill stuffs f. o. b. cars L. A., in quantity, are:

Rolled Barley	1.15
Bran	1.30
Feed Corn Meal	1.55
Shorts	1.45
Wheat, per cwt.	1.65@1.70
Cracked Corn	1.50
Oil Cake Meal	2.10
Cocoanut Meal	1.55

SEED PEANUTS FOR SALE.

Best Californias; foothill grown; shelled or unshelled. The best seed in every way. Quantity limited. Place orders at once. Prices very low.—H. E. WARD, Charter Oak, Cal.

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IN WOMAN'S BREAST
ANY LUMP IS CANCER

Mailed Free—How to Cure Yourself at Home—No Pain—No Risk.

NO PAY UNTIL CURED—GUARANTEE—JUST SEND YOUR NAME

MRS. E. CROSTHWAITE,
954 Arlington Ave., Oakland, Cal.,
President Golden Gate Woman's Club,

was cured of large cancer of her breast, side and armpit by Dr. Chamley's medicine in 14 days. *Don't doubt, don't delay.* WRITE AND ASK HER. You have nothing to lose—everything to gain by doing what I tell you. You can't afford to trifle with Cancer. Life is surely worth sending your name. 130-page book sent free.

My discovery—a Pacific Island plant extract—has cured thousands of Cancers in from 10 to 90 days, after celebrated physicians and surgeons had declared them "as good as dead."

Address, Dr. and Mrs. Dr. Chamley & Co.,
25 Third Street, San Francisco, Cal.
KINDLY SEND THIS TO SOME ONE WITH CANCER

San Francisco Markets.

San Francisco, Feb. 14, 1906.

Butter.

Weaker markets prevailed for all descriptions of Dairy Products yesterday, the continued mild weather causing increased arrivals and buyers, in anticipation of lower prices, restricting their orders to absolute current needs.

Fresh Calfornia extras	28½
Fresh California, firsts	27
Fresh California, seconds	24
Eastern extras	25½
Storage, California, extras	25½

Cheese.

California, new	13½
California firsts	13
California seconds	12
Eastern, Cheddars	15½
Storage, California	14
Storage, Eastern	15

Eggs.

Receipts of eggs were over 2000 cases and under free offerings of Ranch values receded 1-2c. Selected store were steady at the old quotation, but first were lower. Bids of 16c were made for selected store, but as 17c was asked no deal was consummater. The market is now down to a point that as soon as the weather becomes more settled, storing will commence.

Eggs, Fresh Ranch	17½
Firsts	17
Storage, Eastern	14

Poultry.

Old Roosters, per doz.	4.50@5.50
Young Roosters, per doz.	6.00@7.00
Hens, per doz.	4.50@7.00
Ducks, per doz.	5.00@7.00
Turkeys. per lb.	15@18
Geese, per pair	2.00@2.50

Live Stock.

The live stock market is booming, supplies of most kinds being extremely light and the demand vigorous. All descriptions of Cattle are quoted at improved prices and Hogs are held at higher basis figures, ruling strong under keen competitive demand. Lambs are also firmer.

Hogs, per lb., 80 to 130 lbs.	6½@6¾
Hogs, per lb., 130 to 250 lbs.	6¾@6⅞
Hogs, per lb., 250 to 350 lbs.	6¼
Hogs, per lb., rough heavy	4½@5
Prime Steers, lb.	7¾@8
Cows, per lb.	5½@6¼
Calves, lb.	5@5½
Sheep, ewes, per lb.	4½@5
Lambs, per lb	5@7
Wethers, per lb.	5@5½

Potatoes.

River Burbanks	50@85
Oregon Burbanks	75@1.20
Salinas Burbanks	1.00@1.50
Sweets, Merced	75@1.25

Vegetables.

Asparagus, per lb.	10@20
Rhubarb, per lb.	6@9
Onions, yellow, per sack	75@1.00
Bell Peppers, green	17@22
Cucumbers, per doz.	75@1.00
Tomatoes, per box	1.00@1.50
String Beans	17½
Wax Beans	18@20
Summer Squash, per box	1.00@1.50
Green Peas, per lb.	2½@5

Citrus Fruits.

Navels, fancy	2.00@2.75
Seedlings	1.00@1.25
Lemons, standard	1.00@2.50
Grapefruit	1.00@3.25
Tangerines	1.00@1.50

Fresh Fruits.

Apples were in light supply and firm at the old standard of values.

Apples, per box, extra	1.75@2.00
Apples, fancy	$1.25@1.50
Cranberries, per bbl	15@16

Grapes, per box or crate	1.00@1.25

Beans, Dried.

Limas	4.90@5.00
Pinks	2.00@2.15
Small Whites	3.15@3.25
Black Eyes	4.50@4.75
Bayos	3.50@3.75
Red Kidney	3.50@4.00
Horse Beans	1.65@1.85

Hay.

Barley, new	$8.00@11.00
Alfalfa	7.50@12.00
Wheat	11.00@16.00
Oats	7@12.50

Grain.

Wheat	$1.33½@1.36¾
Barley	1.22
Corn	1.33
Oats	1.50@1.70
Rye	1.45@1.52
Rolled Barley, per ton	26.00@27.00
Bran, per ton,	19.50@20.50
Feed Corn Meal, per ton	20.50@30.50
Middlings .. ½	26@30
Cracked Corn, per ton	30@31
Oil Cake Meal, per ton	37.00
Cocoanut Cake, per ton	22.00

Hops.

Grades	8@11

CITRUS MARKETS

The past week has been another one of very satisfactory prices for citrus fruits, with the exception of two days of extremely cold weather during which sales were slow and the market consequently slightly depressed. With the warming up the market took a brisk rise, prices being firm at a slight advance on all grades.

NEW YORK, Feb. 13.—Twentyfive cars were sold at auction today. The market is very strong and is about 15c higher. The weather is favorable.

NAVELS

	Averages
White C st, Covina Exchange	$2.25
Coyote, ch O-C Exchange	2.25
Red C xc Covina Frt Ex	2.30
Quail, xc, O.—C. Ex	2.35
Red Shield, xc, ACG, Ex	.2.55
Blue C. fy, Covina Ft Ex	.2.55
Gold Buckle xf, R H Ex	.2.60
Our Pride, xf, Riverside Ex	2.60
Golden Rule, xc, Riverside Ex	2.65
La Mesa, xf Riverside Ex	2.65
La Mesa xf, Riv. Ex (halves)	1.55
Uncle Sam xf, Riverside Ex	2.70
Foothill	2.25
Medallion, fy, Spence Ft Co	2.30
Corona Queen xc Spence Ft Co	2.40
Aurelia xf Spence Ft Co	2.60
Mountain Lion, fy F. H. Speich	2.30
Albion ch, Thos Strain	2.40
Caledonia, xc, Thos Strain	2.50
Tiger Head xc I. L Lyon & Son	2.45
Lion Head, xf I L Lyon & Son	2.55
Tiger Head xc I L Lyon & Son	2.60
Lion Head xf, I L Lyon & Son	2.65
Pyramid, xc G. R Hand & Co	2.45
Red Keystone xc King Ft Co	2.50
Golden Eagle, st, C C Chapman	2.50
Old Mission fy, C C Chapman	.2.70
Old Mission fy, C C Chapman	3.10
Criterion, xc Penn Ft Co	2.55
Carnation xc Moulton & Greene	2.55
Gypsy Qneen xf Moulton & Green	2.60
Independent fy Highlands	.2.55
Independent fy Highlands	2.60
Whittier, xc, W. F Whittier	2.55
Whittier, xf, W F Whittier	2.65
Clover, xc, Redl O G Assn.	2.60
Rose xf, Redl O G Assn	2.80
West Highland xc Cleghorn & Co	2.60
West Highland fy, Cleghorn & Co	2.90
Mt Harrison, xc, F L Sewell	2.60
Mt Harrison xf, W L Sewell	2.70
Signet xf O G Cash Assn	2.85

THOMPSON IMPROV'D NAVELS

Orchard or Nat'l Or Co	2.90
Red Shield, xc, A C G Ex	2.65

LEMONS

Fountain ch Moffat Bros	$3.00
Standards	2.70

GRAPEEFRUIT

Lochinvar ch, R H Ex	$2.25

TANGERINES

Orchard or, Nat'l Or Co	2.70
Signet, xf, O G Cash Assn	.2.70
Blue Keystone, fy, King Ft Co	1.70

New Orleans Market

NEW ORLEANS, Feb. 13.—Three cars sold at auction today.

NAVELS

California, Riverside Ex	.$2.15
Victoria, xf, Riverside Ex	.2.45
Navajo, st, Riverside Ex	2.55
Coyote, ch, O C Exchange	2.50
Owl, st, O C Exchange	2.20
Captain, st, A H Fruit Co	2.55
Spanish Girl	2.60

Climate and Crops

U. S. Department of Agriculture, Climate and Crop Bulletin of the Weather Bureau, California Section, for the week ending Monday, Feb. 12.

General Summary.—The weather was partly cloudy and warm in all parts of the State nearly all the week. Light rain fell in all sections at intervals from Thursday to Sunday, and heavy rains occurred in portions of Southern California Thursday and Saturday. The southern reservoirs are well filled and all streams are running, insuring abundance of water for irrigation during the season.

Conditions were exceptionally favorable for growing crops and farming operations. Grain is in good condition and making satisfactory growth, with indications of at least an average yield. Plowing and seeding are completed in some sections and progressing rapidly in others. Sugar beet planting continues and work has commenced in the hop fields. A carload of asparagus was shipped east from Alameda county on the 9th, some twenty days in advance of the first shipment last year. Grass is making fair growth and green feed is quite plentiful in nearly all sections. Stock are generally in good condition. Potato planting is in progress.

Orchards and vineyards continue in good condition and cultivation is progressing. Early deciduous fruits are advancing rapidly and several varieties are in bloom in the central and southern sections. Present prospects are good for an excellent yield of fruits and grapes. Oranges and lemons in the Santa Clara valley are ripening rapidly and orange harvest is in progress in the Cloverdale district. Orange shipments from Southern California are light.

Eureka Summary.—Weather continues favorable for all vegetation. Plowing and seeding are progressing. early sown grain is in excellent condition and making rapid growth. Grass is doing well. Stock are thin but much improved.

Los Angeles Summary.—Generous. well distributed rain during the week benefitted vegetation, and grain and grass made good progress. Seeding continues, but will be finished this week in some places. Olive crushers are busy making oil of fine quality.

Last week the Riverside packing houses kept reasonably busy and 137 cars of oranges were shipped. This brings the total for the season up to 1130 cars, and shows 325 cars less this season than last.

The Victoria Avenue Citrus Association of Riverside had the honor of topping the market, receiving $3.05 for Thompson's seedless. This is one of the highest prices of the year.

The Arlington Heights Fruit Company of Riverside report that their lemon crop this season will break all previous records.

The directors of the State Commission in Lunacy have agreed upon a site at Folsom for the erection of an asylum for insane criminals.

Among the citrus nurseries, Pollard Bros., of Alhambra, are in the first rank and they advertise a full line in the Cultivator.

Thos. S. Armstrong of Anaheim is advertising several different strains of fine poultry for sale in this paper.

Morris Bros., Banning, Cal., are advertising White Leghorns and Barred Rock eggs for sale in this paper.

If interested in turkeys read advertisement of Mr. N. Frank Morse, in this issue.

Attention is called to the poultry advertisement of A. W. Huskin's in this issue.

Buff Plymouth Rocks are for sale by F. W. Tutin of Riverside, see his card.

Blue Andalusians are advertised by C. E. Chittick of Los Angeles this week.

Harry McIntire's celebrated buff Cochins are advertised in this issue.

The Redlands Board of Trustees has ordered an election to be held on Monday, February 12th for the purpose of issuing bonds to build a septic sewer system, estimated to cost $80,000, and to build a new city hall, costing $20,000.

Glendale voted for incorporation and carried the day by 75 to 41.

A POULTRY COLONY.

A new departure in poultry matters is the establishing of a poultry colony which is now under way at Inglewood. Large tracts have been subdivided into several of from one to several acres and these are being taken up by poultry people. The L. A. Realty and Trust Co., are subdividing large tracts and selling in parcels to suit. One of these tracts has been taken up by the Anna L. Pinkerton Co., which will make a model plant on about nine acres. The place will be devoted entirely to White Wyandottes. will have large runs all most conveniently arranged as to feeding, cleaning and general care.

Inglewood aims to be a second Petaluma in the matter of poultry. No surer way to wealth for any community exists than through the poultry yard.

ALBER'S BLACK MINORCAS.

"The best strain of the best breed" is what Mr. George Albers strives to do. Of course breeders of other varieties may dispute with Mr. Albers as to which is the best breed. But sure it is that his Black Minorcas are beauties in looks and beauties at the performance. Big, fine looking eggs and lots of them.

It is indeed a pleasure to look over his yards near Los Angeles, and see his prize winners. Wherever exhibited Alber's Minorcas have won ribbons and with it all, Mr. Albers is a most genial and honorable man with whom to deal.

If any of our readers are interested in butter and cheese making machinery or supplies, or especially in the Sharples Tubular Separators, they will receive faull information by addressing The Joshua Hendy Machine Works, 38 Freemont street. San Francisco.

The Superior Light & Heat Company are advertising their Superior Acetylene Generator on another page of this paper and it is claimed to furnish the most perfect light and heat at a very moderate cost. Write them for full information, mentioning the Cultivator.

After an expenditure of about $500,000, the Southern Pacific officials announced yesterday the final completion of a new piece of track thirty-nine miles long in the Colorado desert, which will enable their trains to run without interference from the waters of the Colorado River, which have filled the Salton Sink and ruined about forty miles of their main line.

More tile is going down all over the Orange county celery lands. The drainage is having a wonderful influence on the soil, further than simply getting rid of the water. The celery does not freeze as quickly. In fact, it is practically impossible to freeze the crop with the water all out of the ground.

Owing to the S. P. Co.'s refusal to provide better accommodations between that place and Los Angeles, the members of the Board of Trade at San Fernando have purchased a 14 passenger automobile.

C. C. Desmond of Los Angeles has been appointed by Governor Pardee as a trustee of the State Reform School at Whittier.

The Sinaloa Land Co., of Los Angeles has purchased five thousand acres in the State of Sinaloa, Mexico.

Sonoma county is now free from debt, after struggling under the burden for more than thirty-five years.

Campbell System
—OF—
Soil Culture

is revolutionizing agriculture in the semi-arid regions of the west. With an annual rainfall of 14 inches, crops of all kinds are as certain and as large under the Campbell System as in the Eastern States. It is a system of scientific "dry farming" evolved through 26 years experimenting in the arid regions.

The late J. Sterling Morton, Secretary of Agriculture, wrote: "Yonr great work in soil culture is thoroughly appreciated by every thinking citizen of Nebraska. Your intelligent efforts to benefit the agriculture and horticulture of this state are of greater value to your race and to those who come after you than all the efforts of all the members of Congress who have ever represented this commonwealth at Washington."

Campbell's Soil Culture Manual for 1905, 96 pages, is a complete exposition of the system. Explains how rain waters may be stored in the soil, moisture movements, relations of air to plant growth and the control of these conditions and functions by cultivation. Practically invaluable to all dry region farmers.

BY MAIL, POSTPAID, 50c.
Address with enclosure.
H. W. CAMPBELL, BETHANY, NEB.

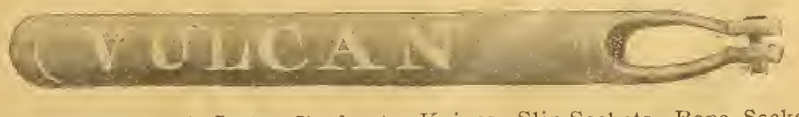
OPIUM and Whiskey Habits cured at home without pain. Book of particulars sent FREE. B. M. Woolley, M.D., Atlanta, Ga., 103 N. Pryor St.

RUBEROID ROOFING

The peer of all with 14 years' record for durability and efficiency.
Cheapest because best.

BLAKE, MOFFITT & TOWNE
Both Phones 679 242 to 248 So. Los Angeles St., Los Angeles, Cal.

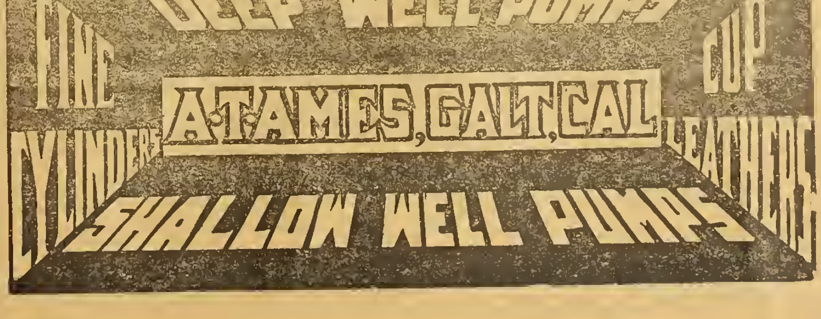
WE MAKE THE VULCAN

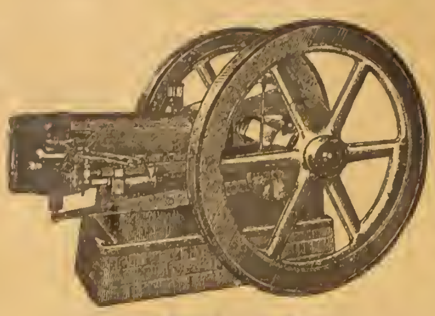


Well Rigs, Hydraulic Jacks, Perforator Knives, Slip Sockets, Rope Sockets, Casing Spears, Mouse Trap Pullers, Subs, Sand Pump , Mud Scows, Head Block Springs, Starter Rings, Link Jars, Revolving Jars, Bits, Diamond Drills, Fish Tail Drills, Wrenches, Temple Screws, Stems, Sinker Bars, Jokers, Well Caps, Swedges. We keep Standard Reins, Rings, Clay Cutters, Etc., constantly in stock, and can fill orders for Sand Pumps promptly.

ASK WELL PIPE MANUFACTURERS FOR THE VULCAN STARTERS. WE HAVE ALL SIZES.

Vulcan Iron and Tool Works, 917-919 North Main St., Los Angeles, Cal.





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Designed and built by Western experts for Western use with Western fuel. In construction the Western embodies many original, yet practical ideas, which place it in advance of any other make on the market today. The simplest, strongest and best engine for

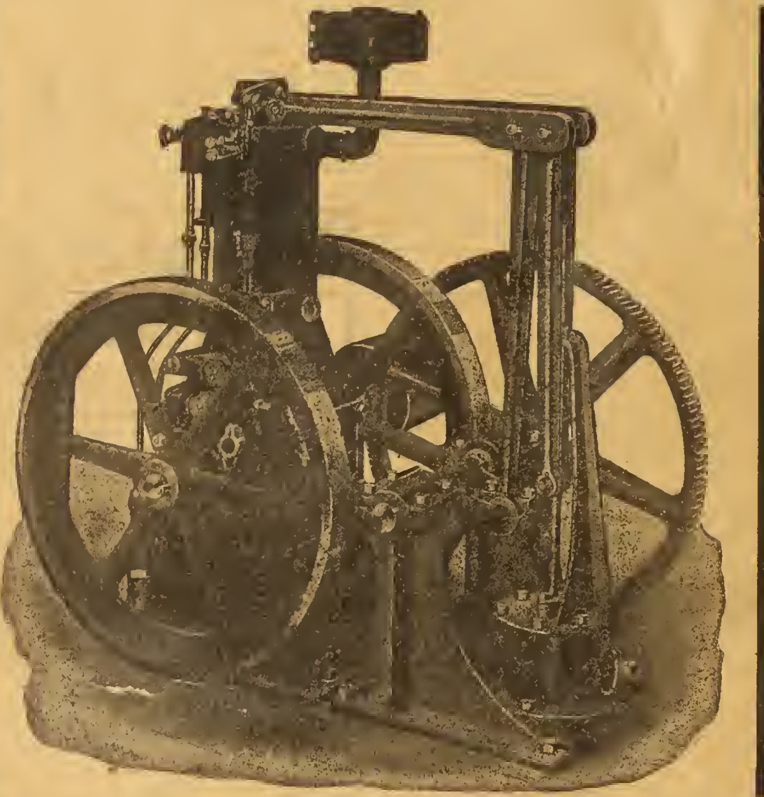
Irrigation, Power and Electric Plants.
Any Size from 5 to 500 H. P.

Burns cheapest fuel—gasoline, distillate or crude oil—with a saving of 20 to 40 per cent over any other style. **Send for Illustrated Catalogue** fully describing every detail of construction; tells **how** and **why** the Western excels all others; it gives the facts—the proof. Learn what Western engines are doing for others. Send your name today—ask for latest issue, A6.

THE WESTERN ENGINE
Maximum Power at Minimum Cost

WESTERN GAS ENGINE CO.
908-932 N. MAIN ST. LOS ANGELES, CAL.

LITTLE WONDER



That's it's name. Little wonder it is that that is its name and that it is so exceedingly popular It's cheap. It's effective. And it's so handy and always ready. Runs the pump, the cutter, the grinder, the churn—any old thing on the ranch. Look it up right away, because you will be interested.

Wm. Gregory 602 North Main Street Los Angeles

NATIONAL WOOD PIPE CO.

MADE FROM CALIFORNIA REDWOOD OR SELECTED PUGET SOUND YELLOW FIR **WOOD PIPE** WOODWARD PATENT MACHINE BANDED PIPE
WHEELER PATENT CONTINUOUS STAVE PIPE
BORED WOOD WATER PIPE

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A booklet, "The Whole Story Aboul Wood Pipe," mailed free upon reqnest

NO, THIS IS NOT AN ARTESIAN WELL, BUT

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SUPPLIED BY
S. J. SMITH MACHINERY CO.
POWER PLANTS, PUMPING MACHINERY AND WATER SUPPLY GOODS 212-214 S. Los Angeles St., Los Angeles, Cal.

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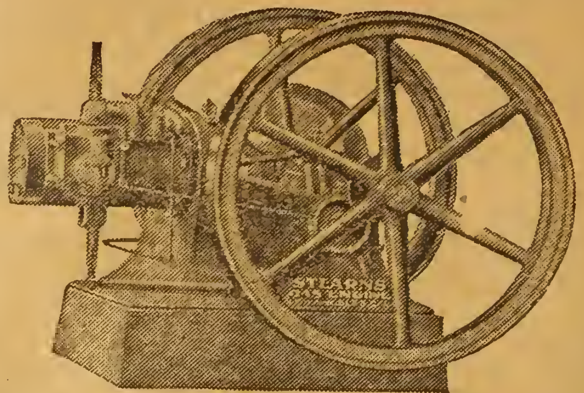

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Every One Satisfactory

Built for California cheap fuel.

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Stockton Reversible Gang Plow

EFFECTIVE DURABLE LIGHT OF DRAFT

This is our regular Plow and Land Shifter and Rear Lever. Land Shifter simple and durable. It is in easy reach of operator and there is no danger of wheel running over foot.

Houser & Haines Mfg. Co.
Stockton, Cal.

The New Pomona Pump

We must not attribute all of the success of the Pomona Pumps to the Pump Head or the part of the machinery above the ground, for there is another part just as essential, and this is the cylinder and valves. Our cylinders are made of the best seamless brass tubing made to our order in the East. The valves are made of the best phosphor bronze and are cast and finished complete in our shop.

These valves are of the most improved pattern, have cone-shaped clappers with ground metal seats. There is only one moving part in each valve and we have never had them clogged with sand. The plungers are furnished with three cup leathers, each made from the best oil tanned leather.

With the New Pomona pumphead using a quick return motion and lap in the plungers, these valves have sufficient time to seat before taking up the load of the water column, consequently there is no hammer or jar. The Pomona Pumps are taking the lead for irrigation purposes and are rapidly displacing pumps of inferior design and workmanship.

Send for catalog and estimates for our new plants.

Pomona Mfg. Co.
POMONA, CAL.

When writing to Advertisers Please mention Cultivator

CALIFORNIA CULTIVATOR

DEVOTED TO
AGRICULTURE
IN ALL ITS BRANCHES

Los Angeles **FEBRUARY 23, 1906** **San Francisco**

THE FURROW SYSTEM OF IRRIGATION.

During past years there has been much discussion regarding the merits of the different systems of irrigation. The furrow, the basin, and the check or flooding system, all had their adherents. There are, at times, and in certain places at all times, good reasons for using each of these, but the one now universally adopted is the deep furrow system. Did all resort to the checks or flooding, so common at one time, many parts of the State would not have a sufficient water supply to reach all orchards.

A HELPFUL BOOK FOR FARMERS

To one not in constant touch with such matters it is truly astonishing news to learn at what a rapid rate rural telephone lines are being built all over this country. A network of such lines is fast spreading all over the land, furnishing a means of quick communication to the farmer as well as to the dwellers in the towns and cities.

But many communities have not yet built such lines, and the farmers there are consequently shut off from the benefits and privileges their more fortunate neighbors enjoy. It is only a question of time, however, until every farm home will have its telephone. The farmer who hasn't connection now with a rural line will soon be taking the matter up with his neighbors and figuring how they can build a line to their farms.

For the benefit of all such we recommend that they read the book, "How the Telephone Helps the Farmer," published by the Stromberg-Carlson Telephone Mfg. Co., Rochester, N. Y. Besides enumertaing all the practical advantages the telephone offers the farmer and his family, it tells how to go about it to interest your neighbors with you to build a rural telephone line; how to organize the company,— giving blank forms for constitution, by-laws, etc.; how to select and buy the proper equipment, with a chapter on the probable cost per mile to construct the line. In fact, the book is full from cover to cover with helpful, practical information the farmer cannot get anywhere else and makes the preliminary work of getting a telephone line perfectly clear and easy. The same company publishes several other books you will want. If you are interested they will send them all to you free, and will assist you in every way they can to organize your company, and build your line properly, so that it will not only be a success, but a benefit to every one on the line. Write today for the book. "How the Telephone Helps the Farmer," and tell them what you are doing and what you expect to do,—they will give you expert advice which will make the work easy for you. It will only cost you a stamp to write for it, and may save you several hundred dollars when you come to build your line.

BODEN'S WHITE LEGHORNS

John P. Boden of Watsonville, is out with one of the prettiest catalogs that we have seen issued for any poultry yard. Has only twelve pages but is full of half-tones of his own White Leghorns, Toulouse Geese and pigeons. The cover is of a heavy grey tint board.

Regarding his stock, Mr. Boden says in his introduction: "I have not striven to raise birds for exhibition, but to build up a strain of first-class egg producers."

Lovers of White Leghorns will enjoy a look at Mr. Boden's catalog.

SAVE THE WATER

Just at this moment when nature is so profuse in its gifts of water, there is probably but little thought or worry as to the amount which shall be on hand in a few months' time.

At the same time it is a most opportune time to consider how more water can be saved for the dry season which will surely prevail a few month hence. So it is proper to call attention, as we have done before, to the great economy secured by the use of the surface irrigation pipe. This pipe is put up in lengths of ten feet of a single galvanized pipe of various sizes. A request for a catalog at the new office of the Tallerday Manufacturing Company, 210 Los Angeles street, or better a talk with Mr. Tallerday himself, will give information which will be of value.

Leo W. Marden, the White Leghorn man of Hynes, says the eggs from his White Leghorns last year averaged 95 per cent. fertile. He ascribes this to the care in mating and keeping separate his breeding pens. Only the choice hens that are bred to lay are in those pens. His effort is for the 200 egg hen and this he is closely approaching.

S. C. White Leghorns, stock and eggs, are advertised by the Monte Vista Poultry Farm, Corning, Calif., this week.

A Few Remarks About the Care of Little Chicks

BY A. A. WHITE

37 White Minorca hens laid over 3,000 eggs during the months of December, January, March, April and May. Eggs sold for fancy prices—37 hens earned $275.00 in five months—fed daily on Coulson's Mash Egg Food. A. A. WHITE.

The problem of how to raise to maturity strong, healthy chickens has been and will be a very vital question to all poultrymen, who wish to make a success. I believe the excessive mortality amongst chicks is one of the greatest reasons why many poultry ranches are not paying double the dividends or profits that they should. Look at the amount of time and feed wasted on poorly hatched and wrongly fed chicks (which, as a natural consequence, die,) that would be more profitably spent on healthy stock.

Yet the solution of this problem is not so hard as it appears. The main thing is to get your chicks hatched right and from stock with lots of vitality. This being granted, now comes the FEED QUESTION, the VITAL QUESTION.

It has been proved beyond a doubt that chicks fed on dry food at least for three or four weeks, have stronger constitutions and are far better developed than soft-food-fed chicks. Why is this? Because the natural food of many fowls is seeds, bugs, etc., for which nature has provided.

WHITE MINORCA ROOSTER
Raised on Coulson's Chick Feed. The Feed is the Making of the Chick.

Now, anyone knows that a hen always raises her brood with better success and also far more healthy than brooder chicks; simply because she forages around and finds them a grain here and another there, so the result is they work and exercise at the same time, resulting in healthy bodies, and good growth.

I have proved to my own satisfaction that Dry Feed is IT every time. My experience dates back to when I used crumbly soft food for little chicks and although I could raise a fair percentage, yet I had better success with dry chick food; particularly the ready mixed feed, which I got from my store-keeper, called COULSON'S SPECIAL DRY CHICK FOOD. The first sack I bought seemed high priced but say, the success I had warranted it, for I found it went further than the other feed, and the chicks grew so fast.

A small batch of chicks, about 200, were fed on Coulson's Special Dry Chick Feed for the first month entirely. I scattered it on chopped straw, etc., and made them eat it up clean, so that I couldn't see any left in the straw at night. After they were a month old I fed them with COULSON'S GROWING CHICK FOOD, which was a more bulky food, and therefore, forced them on growing. They were a fine bunch of Chicks, strong and chirpy, and REMEMBER THIS, no bowel trouble or picking of feet They were too busy hunting for their food(Coulson's Special Dry Chick Food) in the straw, to have time to stand around looking for feet to pick at, and their crops only taking a seed at a time, were not gorged, but kept grinding away steadily. At eight weeks old I had 107 chicks left out of 200 out of the incubator. How's that for a percentage? Of this number I sold four dozen broilers at eight weeks old for $3.50 per dozen: average weight being One Pound, fourteen ounces and some went over Two Pounds. These were just White Leghorns, not heavy breed chicks.

That convinced me that dry feeding was the solution of how to raise chicks successfully and COULSON'S SPECIAL DRY CHICK FOOD is the feed to do it with economy. My chicks at eight weeks of age had cost me about 9 cents each, and were fed entirely on COULSON'S SPECIAL.

RAISED ON COULSON'S CHICK FEED.

ADVANTAGES OF COULSON'S READY-MADE CHICK FEED.

A prepared Chick Feed composed of sound selected grains broken to the proper size and blown free from dust is the most economical feed for young chicks. One hundred Pounds will feed as many chicks as Two Hundred Pounds of ground grain.

Why It is Preferable.

The proper feeding of Poultry is without a doubt the most essential factor in the raising of any kind of poultry for profit. Considerable advancement in the feeding of poultry has been made in the past few years especially in the feeding of little chicks.

Chicks should be fed a feed that makes healthy, well developed bodies. COULSON'S SPECIAL DRY CHICK FEED contains the ingredients that are the best adapted to give nourishment to the growing chicks. Sweet, tender seeds, cracked grains, blown free from dust, cut oat meal, tiny pieces of cooked and dried meat, fine particles of fresh cut bone, charcoal, burnt bone, and other good things.

It is a clean, sweet feed that is easily digested, and chicks show an increase in weight, strength and beauty when fed it exclusively. Little chicks need no other food for the first six weeks. You can feed your chicks entirely on COULSON'S SPECIAL DRY CHICK FEED the first six weeks at a cost of about 5 cents apiece.

Ask your feed dealer about Coulson's Special, and be sure that he don't sell you something else. Remember it is COULSON'S that you heard so much about, and make YOUR WILL POWER strong enough to insist on getting Coulson's.

If your dealer don't keep it, write us, and we will tell you where and how to get it.

COULSON POULTRY AND STOCK FOOD CO.. PETALUMA, CAL.

CALIFORNIA CULTIVATOR

Vol. XXVI—No. 8 LOS ANGELES, CAL., FRIDAY, FEBRUARY 23, 1906 Subscription $1 a Year

The Functions and Importance of Roots

By Eizo Kondo, a First Year Student in Agriculture at the California Polytechnic School, San Luis Obispo.

Hidden at the bottom, like the engine of a steamer, the root is a most important organ of the plant life. The functions are three-fold as a rule; it anchors the plant to the soil, it absorbs the nutriments for the plant from the soil, and it serves in many cases as a store house of food for the future use of the plant.

The firmness of plants in the ground depends upon the nature of their roots, though the depth and character of the soil influence, to a certain degree, the extent of the roots and the tenacity of their hold. The roots of the maize in a rich, tenacious soil. for instance, extend but two or three feet, while those in a light, sandy earth have been traced to a length of fifteen feet. In general, those plants which are exposed to much stress of weather have large and strong roots. Thus tall trees and herbs are fastened to the ground by an elaborate root system, while those whose circumstances do not require such have but a few slender roots.

All the underground roots may be divided into two classes. The dicotyledonous plants or exogens, have at first a single descending axis, the tap-root, from which, in most cases, the lateral or secondary roots branch out in all directions. The order of their branching is more irregular in older plants than in younger ones, owing to the mechanical hinderances of the soil. This mode of growth beginning with one main root is called the axial mode. Monocotyledonous plants or endogens have no single axis, but produce what are called the crown roots or fibrous roots whose mode of growth is monaxial or radial, that is, they radiate in all directions from the base of the stem. This distinction has important bearings in agriculture, for the roots belonging to the first kind draw their plant food from the lower strata of the soil, while those of the second class spread near the surface and consequently are more dependent upon the external conditions.

Before describing the most important function of roots, absorption, it is necessary to consider their structure. The root is composed of four parts; the epidermis (bark or skin) the outer covering for protection against harms and re-absorption of the sap by the soil; the cortex or the soft layer beneath the vascular cylinder, the hard woody axis running through the center, and the medulary rays which are fine silvery lines radiating from the center. Besides, the tip of root hair is termed the spongiole from its texture. This important section is well protected by the root-cap consisting of cells that have been loosened from the main structure and thus serve merely as an elastic cushion to defend the true termination of the root.

The growth of nearly all roots is mostly in length but very little in thickness. Wigand, in an experiment, divided the young root of a sprouted pea into four equal parts, by ink marks and after three days he discovered that the two upper divisions had scarcely lengthened, while the third was double and the fourth was eight times its previous length. For the same reason a root cut off in transplanting never afterwards extends in length. The quantity of roots actually belonging to any plant is usually far greater than can be estimated by roughly lifting them from the soil. A conservative estimate of four well-developed corn plants gave an aggregate length of over a mile of roots not counting the root hairs. The entire root system of a squash vine was found by actual measurement to be over fifteen miles in length not considering the root hairs, and of this length, the major part must have been produced at the rate of 1000 feet per day,(Osterhout.) The quantity of roots in per cent of the entire plant in the dry states was found to be as follows:

Winter wheat examined last of April, 40 per cent; winter wheat, examined last of May, 22 per cent; winter rye, examined last of April, 34 per cent; peas examined four weeks after sowing, 44 per cent; peas examined at the time of blossom, 24 per cent.

The Pride of the State.—Our Big Tree, Sequoia gigantea.

Now the imbibing the nourishment from the soil is of the utmost importance to the plant life. The root, however, is ingeniously fitted for this work. The root hairs which are exceedingly minute and delicate and cover the young portions of the root system, absorb by osmosis the plant food very dilutely dissolved in water. The raw sap thus imbibed from the soil is carried upward by the root pressure and capillarity, through the vascular cylinders of the various portions of the plant, to the leaves. the starch factory; then a portion of the manufactured food is carried down back to the roots for their growth and often for storing it for future use. It would almost appear that the root is endowed with instinct in its search for food. From the very beginning of their development, strenuously against obstacles groping around with numerous rootlets penetrating through chasms, undermining rocks, they go down day and night until they strike their goal, the plant food. Their spread also, as a rule, corresponds to that of the branches, so that they may drink every drip of the rain and dew falling from the plant.

Now for the majority of the biennials and for some of the perennials, the roots serve as storehouses of the plant food. This is one of the many wonders performed by nature. Plants like the dahlia and hawkweed perish above ground in winter being unable to withstand the frost and cold, but survive underground through the supply of nourishment stored in their roots, so that they may start afresh in Spring with all the advantages over their less prepared competitors in the never-ceasing struggle for existence and reproduction. Again the hardy winter herbs such as the plantain, dandelion, and common dock which keep a rosette of green leaves above ground throughout the winter are supplied with more or less fleshy roots full of nutriment.

The soil is not the only medium for roots to live in, though it is the most proper and common one. Many plants are living in water fed and supported by the aquatic or water roots which may be easily distinguished from the subterranean roots through their white thread-like, tender and succulent texture. The parasites have a sort of root known as haustoria, a term meaning suckers or absorbers, for they draw sap, either raw or digested, from their hosts for their own use. The aerial roots are those which have no concern with the soil, nor are dependent upon other plants except perhaps for anchorage, as the orchid, but acquire plant food and moisture from the atmosphere. Often, however, they serve as merely the climbing roots, as in the case of the poison ivy or the trumpet vine. The adventitious roots occur on the stems as those which appear at the lower nodes of corn. They serve to firm the plant in the soil as well as to perform the other functions of ordinary roots. Most plants are fortunately able to produce the adventitious roots when they are covered or kept in contact with the ground, thus making their propagation by cuttings and layers possible.

Hastily, by way of conclusion, the root may be defined as a body of tissues provided with vascular bundles which originate from an older, previously existing part of the plant: its growth is not limited, and it never directly gives rise to a leaf.

NITROGEN WANTED.

A writer in the Florists' Exchange of New York, says: "The question of an economical source of nitrogen for commercial purposes, shows possibilities of becoming a problematical one for growers in the near future. In 1904 nitrate of soda could be purchased at from $40 to $45 per ton; at present its market valuation is held at about $52 per ton at wholesale. Organic nitrogen, which formerly was obtainable in the form of by-products of slaughter houses, is no longer available at reasonable prices; the meat products of those establishments now having strong demand as poultry food. Unquestionably, there is great need of a new source of commercial nitrogen from some quick-acting material at a reasonable cost.

Deciduous Fruit Culture

BY J. W. MILLS, POMONA, CAL.

GRAFTING FIGS AND OLIVES

Editor Cultivator.—Is the process of grafting figs and olive trees different in any way from that used in grafting apples? Constant Reader.

Olives may be grafted successfully by following the methods used in grafting apples, but figs are more successfully grafted by taking out a V-shaped piece of bark at the upper end of the stump and inserting therein a scion from last year's growth. The scion should be so cut that it will set down in the incision, the inner barks of both stumps and scion joining along the edges. The curves of the bark side of the scion will bring the inner barks together if trimmed properly. The bark on the stump is much thicker than that of the scion, so the scion will be countersunk. Wax well with a mixture of one part tallow, two of beeswax and four of resin. When well mixed, grease the hands, turn the liquid wax into warm water and pull it like you would candy. This will toughen the wax and make it more durable. Wax the grafts after wrapping them with twine or cloth. After the grafts have been in two or three days, go over them and wax again to close up any cracks that may open. The wax should be put on with a brush.

Wrap the fig trees with old sacks so that the trunks and branches will be protected clear up to the grafts. The olive trees will send out a mass of suckers that will cover the trunk. These should be topped to prevent them outgrowing the tops, but leave enough to shade the trunks.

* * *

BEETS

Editor Cultivator.—I would like you to give me a little assistance in the way to grow sugar beets, the amount that can be grown per acre, the market prices. Also the nearest sugar factory to Rosamond, and would it pay to grow sugar beets here and ship them. There are hundreds of acres of good beet land here that are not cultivated, but would be if we had a factory in this locality. H. J. L., Rosamond.

It will cost you on an average, $20 per acre to grow sugar beets that will go ten tons per acre, calculating on the cost of harvesting and delivering to the factory at $1 per ton. No one can tell how many tons per acre can be raised in a new district, until a trial is made. There are too many things to take into consideration, such as drouth, time of thinning, insect pests, untimely winds and a dozen other things too numerous to mention. Chino is the nearest point to a factory from your station. You can get the most information on cost of transportation from the factory people themselves as they can do better with the railroads than you can and if you are willing to make an experiment, the factory people will help you if there is any indication that they can make yours a sugar beet district. They will know more about that from the beginning than anybody else as they have made a close study of the subject and are only too glad to open up any new sugar beet district. Write to Mr. Louis Hache, of Oxnard, and state the case to him.

* * *

NEMATODES

Editor Cultivator.—I send hereby a collection of roots and beg of you if you would inform me through your paper, the name of the disease, the cause and is there any name for it? For the last six years I have been trying to replant places of dead peach trees, but every new tree turns out the same as you see in the box of roots I send you. I took all necessary precautions in planting, such as throwing out the old soil and filling in again with fresh soil, but it does no good. I am satisfied that it starts right in the nursery. I know that the nursery where I got my trees has root knot. Hoping to read an answer in your paper, I am yours, A Subscriber.

The samples of root which you send are badly infested with Nematodes, a small worm that is one of a large class. These worms attack beets, parsnips, roses, peach trees and a score of other plants. Your own soil is affected, but how it became so, we cannot tell. The only remedy for you, is to devote your land to some other culture until these worms are starved out. Grow grain or alfalfa for a couple of years and you will get rid of them. You will no doubt find that your older trees are affected the same way, tho' they may continue to fare better than younger trees will. You may remove soil till doomsday and you will still have those worms as long as they have food that will support them.

We cannot give you the specific name (variety) of these nematodes, but if you send a sample to Prof. C. W. Woodworth of the Agricultural Department of the State University, he will give you the information.

* * *

GRAPE QUESTIONS

Editor Cultivator.—I notice in the February 2nd Cultivator, mention of some new varieties of grapes, Blue Portuguese, Cipro Nero, August Giant Verdal, Olivette de Cadanet and Muscatello Fino. Is there any description? G. E. B.

Blue Portuguese is a very early grape, similar to Mission and an arbor grape. Cipro is a very late grape, reddish purple, very tender and crisp, ripens about the time of Purple Cornichon, but is a poor keeper. It is the best flavored grape to ripen in its season. August Giant is a very large purple grape of the Concord class. Verdal is a large white grape, bunches similar to the best London Layer Muscats. Ripe in September. Muscatello Fino is a black grape that is identical in flavor with the Muscat except that it is slightly sweeter. It and Cipro Nero do their best when pruned half long.

* * *

VALUE OF GREEN CROPS

Editor Cultivator.—I see that you are an expert in answering questions. Let me prepare one for solution. If it is too hard for you, please refer it to our professors at Berkeley. Your paper recommends to plant peas, clover, etc., in our orchards to strengthen the soil; to be planted in September or October and plowed under in February or March, occupying the ground for six months out of twelve. The question is this. Will the land receive a greater benefit from these crops than they would if the same had been kept in a fine absorbent condition during these six months by frequent cultivation? C. T.

The last part of the preceding answer is the best we can say on this subject. It has been proven that clean culture exhausts the humus in the soil and that means that the life giving element in the soil is gone. The humus of soils contains the greater part of the available plant food. There is plant food left, but when the humus is gone there is no humic acid to work on it and make it available and the plants begin to suffer. Stable manure supplies humus at the surface, but growing plants supply it at the surface and as deep as the roots go which is far below the plow furrow.

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Practical Farm Science

BY PROF. A. J. COOK

ITALIAN BEES.

Bee-keeper, Orange, asks if I will not give my opinion of the merits of Italian bees in the Cultivator. As this is a very practical question, I gladly answer. The honey bee is wholly oriental. So are all our honey bees, black and yellow races alike, were imported. The black or German bees were first introduced and well distributed before the yellow races were even thought of. The fact that today all our ablest bee keepers keep only Italians, speaks volumes in favor of the yellow race. A race of inferior or even equal merit would hardly supercede a well established breed. Surely not with men of highest intelligence.

The black bees are uniformly black or gray-black throughout. The Italians are a little larger, brownish in color, and marked with three yellow bands or rings on the abdomen just back of the thorax; all of which show plainly when the bee is full of honey. When the honey stomach is empty, the third ring may hardly show. The ring close to the thorax is very narrow, the next wider, while the third is the one that is often obscure. If all the bees show the three rings, then we may be sure of their purity.

I will now give briefly the points of superiority of the Italian race. First—they are more active, and thus work more. They also have larger tongues and thus often gather from flowers with such long tubes that the nectar is beyond the reach of black bees. Common red clover is worthless as a honey plant for black bees, though often of much worth to Italians. For both of the above reasons, Italian bees give much more honey than do black ones. Italians are more active also in defending their hives from robbers and the bee moth. Thus they are safer. I am not sure that they are, as often claimed, less subject to attack from fowl brood and other bacterial diseases. The Italian queens are surely more prolific, and thus they breed up more quickly and are likely to be stronger at all seasons. Lastly, the Italian bees are much more amiable than are the blacks, and so much less likely to sting. I have often worked unprotected for days together with Italians and though I used no smoke, I received no stings at all. I could not say this of black bees.

In only two respects do black bees excel. They are sometimes more ready to enter the supers where the fine comb honey is to be secured, and the honey is a little whiter than the same from Italians. In California, extracted honey will always be produced largely, and so these points will not count, though were I to work wholly for comb honey I should still wish the yellow banded or Italian bees.

The very bright yellow bees are very handsome, and so some breeders are tempted to breed for color alone. Thus the very bright yellow bees are not generally as excellent as are the darker or more leather colored ones. I prefer a leather colored, large, queen to one very bright yellow in color. I therefore urge all to secure Italian bees. I am sure that in California, especially they are much to be preferred to the German race. Nor do I believe with the same chance, as has been claimed, the black bees will run the Italians out. On the other hand, I feel sure that the reverse would be true. I know that vigor is more with the Italians and in a race, vigor is what counts.

* * *

RUSSET APPLES.

The Golden and Roxbury Russet apples are excellent in flavor and of equal merit to eat in hand or for sauce or pies. They are remarkable keepers, and what is best of all they are always crisp and fine. I find the same holds here in Germany. We find no American apples that please us as well as do russets. We can buy the Bellefleuer, the Northern Spy and the Greening, but none stand up and hold the flavor as do the russets. Next to the russets come the Rhode Island Greenings.

I think I have heard from Mr. Maskew that the russets do well in California. Surely they are apples to send abroad. I believe there will develop here a splendid market for apples, and in this case we must study for varieties that will hold up and keep their quality. I doubt if we can find any varieties that will hold their goodness as well as the russets. If the golden russet will do well, it is worthy a first place as a market variety, especially for long distance shipments.

* * *

I have just been reading a very interesting work that gives an account of the phenominal growth of Germany in business and wealth. The Krupp Co. is described at length. This company has made a wondrous and most exceptional record. They do great things for their employees. They have many more offices of help than they can use, and have never had discontented men, or help, and have never been even threatened with a strike. They provide for the families of their employees in case of accident and look after the general welfare of this help. They feel that much of their success comes from satisfied, contented assistants.

He, six weeks after the honeymoon—I suppose you think you were a fool when you stood up and married me?

She—Well, I was the next thing to a fool. —Yonkers Statesman.

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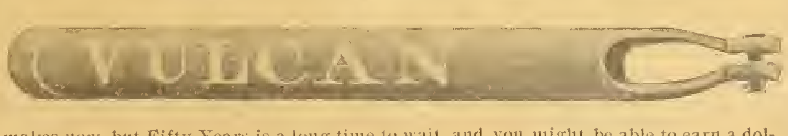

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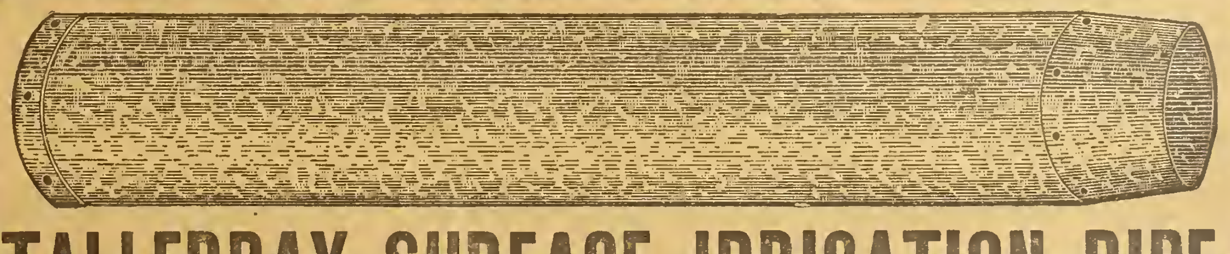

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California Horticulturally

BY JOHN ISAAC, SACRAMENTO, CAL.

ACTIVITY IN VINE PLANTING.

Dread of fatal vine diseases does not seem to materially affect planters in the upper country, for there is a more active planting of vines this season that ever before known. The favorite varieties are table grapes and in San Joaquin and Sacramento counties, these form the great bulk of the new plant, and of these the Tokay takes the lead by all odds. This is unquestionably due to the fact that these grapes have commanded extraordinary prices during the past few years, culminating last season, when prices were best in many years, and the growers who had grapes for sale grew rich. Thompson's seedless is growing in popularity in many localities. It is a heavy and certain bearer and has made a very profitable grape, both for raisins and the table in the past.

* * *

VIGOROUS FIGHT AGAINST PEAR BLIGHT.

There are now six pear blight exerts from Washington, who have been sent out by the Department of Agriculture, at work in the pear orchards of Northern California. These are Prof. Waite, in charge of the work, Prof. Scott, his first assistant, and Profs. W. W. Gilbert, D. B. Swingle, Perley Spaulding and E. L. Shear. Besides these, Prof. Ralph Smith and a number of young men from the University are at work. The policy pursued is to take several sections in which the blight is thoroughly established and concentrate all efforts on these, completely eradicating the blight within a given area. This is for the purpose of demonstrating that with proper work, the blight can be controlled. These sections will then become exemplars of the method and success of the treatment recommended by the Washington experts, and will be used as object lessons for the pear growers and County Horticultural Commissioners, showing that the disease can be controlled and how it can be done. In each section, too, there will be a number of students who will learn how to fight the disease, and hereafter sufficient skilled help will be attainable to control the disease all over the State and give assurance of the future success of the Bartlett pear industry.

* * *

IMPERTINENT INTRUDERS.

When a man, for any cause, becomes prominent in the public eye, he is regarded as a curiosity, and very many people, who are neither interested in the man or his work, and who do not understand either, will intrude themselves upon him, oftentimes very much to his annoyance and detriment. This is the experience which Luther Burbank has suffered from a mere impertinent curiosity to see the man who is being talked about for his remarkable work. As Mr. Burbank is one of the most modest of men, this stupid curiosity would be annoying in any case, but as it most seriously interferes with his labors, it is doubly annoying. One who appreciates the work Mr. Burbank is doing will understand that he has to follow a certain line, sometimes for years to produce the result aimed at, and this requires the closest attention, he cannot afford to stop long enough to be admired by a senseless throng, because he happens to be popular, as the very work for which he is admired would stop if he stopped for the benefit of his admirers. This, however, is the experience of all public men, they are always the target for the curiosity of the unthinking masses, who would gaze upon them as they would upon a curious animal, simply because they are talked about. We notice that, owing to the Burbank grounds being overrun with curious visitors, friends of the great originator have taken up the matter of his protection and a circular has been issued forbidding visitors the premises. It is to be hoped that this hint will be effective, and that those who have no business with Mr. Burbank, except to satisfy a mere morbid curiosity will leave him alone.

THE SILK INDUSTRY IN CALIFORNIA.

After years of waiting for capital to set the silk industry going in our State, it really seems that the auspicious moment has arrived. A capitalist, attracted by the special advantages to be gained by the use of a newly invented silk reel, has provided means to test the feasibility of producing the finished article in San Diego. He has bought thousands of trees and expects to get all necessary apparatus at once.

There is already a local market for all good cocoons, and many persons are preparing to take up the business of silk raising. "Cheap labor" is not a factor. According to consulate reports the Chinese only get about 30 per cent of the available product because of the lack of scientific work with both trees and worms.

The newly patented silk reeler and twister will save one-half to two-thirds of the former amount of labor and do better work. This invention will open a new industry for the State. Good cocoons may be raised in every county in the State. In some sections only one crop can be produced, but in many two and three may be developed if plenty of food trees are present.

Italy annually imports 70 to 80 tons of silk eggs at a cost of $60,000 per ton. One small county in Lombardy sends out $5,000,000 worth of silk every year.

One acre of trees will produce from $75 to $100 worth of cocoons each crop. The United States sends out each year $50,000,000 for reeled silk to keep our more than 900 silk factories at work. The introduction of silk growing and manufacturing may mean millions of dollars annually added to the income of our State.

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160 acres, 140 under cultivation; fenced. Unlimited supply of wood and water; 45 walnut, 150 olive, 100 assorted fruit trees, also berries, all bearing. Nine-room house, barn and other buildings. Address
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You know we could not do business on such liberal terms if our seeds were not as represented. They are guaranteed true to name and the seed grown. Remember, we require no money in advance. Order today, using coupon below, and you will say it was one of the most profitable dollars you ever spent.

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Please send me prepaid one each of your vegetable flower collection. If they grow satisfactorily, I will pay you $1.00 on June 1st, 1906. If not satisfactory, it is understood that I am to be at no expense whatever.
[Write plainly.]
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With the Citrus Growers

BY J. W. MILLS

CUTTING BACK OLD ORANGE TREES.

Editor Cultivator: I have some old seedling orange trees that have been allowed to grow too high and are showing some dead wood. The oranges are good but small. What month is best to cut back? Can the fruit be brought up to a good grade by liberal fertilization? What fertilizer shall I use? What quantity and when?—Subscriber, Santa Barbara.

Any time after the first of March will do to cut back your trees.

The fact that your oranges are small indicate that they should have more nitrogen. We would suggest that you give them a liberal application of stable manure and grow legumes among the trees. The general impression is that nothing will grow under the large seedlings that shade the ground. You will find that a fairly good growth may be had if you give them frequent irrigations. Keep the ground moist and they will grow.

* * *

MAKING MEDITERRANEAN SWEETS BEAR.

Editor Cultivator: I have a number of large Mediterannean Sweets which do not fare well. They set a large crop last year but dropped nearly all of it in June. The trees made a good growth last year but they are a little yellow. Would pure blood be a good fertilizer for them?

A neighbor of mine told me to slit the bark on the trunk as the treees are bark bound. He told me of a number of cases where the trees were treated that way and they afterward bore well. Never having heard of this method of treating trees before, I would like to have your opinion on it before I try it. Please answer through your valuable paper.—A. G. D., Redlands.

It is a common complaint with the growers who have Sweets that they fail to get a crop after a full bloom. The splitting of the bark will often relieve a bark bound tree, but that does not remove the primary cause. Splitting the bark will not hurt the tree. We are not in a position to say what fertilizer to use to insure a setting of fruit. There are too many contingencies that have a bearing on the question of fertilizers. Under the same applications for fertilizers year after year, there will be a different character of fruit during the different seasons. The only rule which we feel sure will not be very far out of the right way, when the trees are not looking just right, is to give them a liberal application of stable manure and keep the condition of the trees as even as possible as regards moisture and cultivation. Green crops grown between the trees will restore the natural condition of the soil better and cheaper than anything but stable manure will give relief in this respect, a little quicker. It seems that there is pretty strong proof that continual clean cultivation has brought about a large number of our citrus troubles. One thing is sure and that is, such farming is contrary to nature and when that becomes a custom in any line of action trouble is sure to follow.

THE HARDY ORANGE.

Just outside my window is a large, vigorous shrub, perfectly hardy in the latitude of Washington and also as far north as Philadelphia, and even in some regions where the winters are still more severe. This shrub was introduced from Japan a good many years ago, and is commonly known as the trifoliate orange, or hardy orange.

Although the shrub belongs to the orange family, it is not a true orange. It has a small fruit about the size of a walnut, yellow in color, but unfit to eat. The leaves of the shrub fall off at the approach of frost. like the leaves of other deciduous plants.

A number of years ago when several great freezes destroyed the orange groves of Florida, our men, who were at that time engaged in the investigation of the citrus fruits in the state. conceived the idea that a hardy orange might be secured by using the small Japanese or trifoliate form as a basis for breeding. To conceive this idea was to act. Soon work was going on, having for its object the production of a race of hardy oranges. The work was done partlv in the greenhouses at Washington and partly in the orange-groves of the South.

The hardy Japanese type was used as one of the parents, while the well-known type of tender sweet oranges of Florida constituted the other parent. Many thousands of crosses were made and many thousands of seedlings, the results of these crosses, were secured. These were grown from time to time in our green houses, and then sent South to be tested.

As soon as the seedlings began to grow it was known that hybrids had een secured: but this was not sufficient. First the hardiness of these seedlings had to be determined, and secondly their nature as fruit bearers had to be ascertained.

The little seedling oranges, having within them the blood of their hardy northern parent and the blood of the edible sweet orange of the South, were planted in a number of sections to test their hardiness. It was found after a few years that they could stand considerable frost; that is, they could be grown as far north as Savannah or Charleston, without fear of serious injury.

Up to this time no fruit had been developed, and it could not be determined what their real value was in this respect. In 1904, however, we began to obtain the first fruit from these new types of oranges, with the result that we are encouraged to believe that we have an absolutely new creation in the way of a citrus fruit, something that, while different from the orange, will be exceedingly valuable to the whole Southern country.

So far, the fruits borne are more like lemons than oranges. Yet they are not lemons in truth: They have some of the characteristics of the grapefruit, or pomelo. They are about the size of an ordinary orange, and not only make most delicious preserves and marmalades, but are very valuable for summer drinks and "ades" of various kinds.

These new hardy oranges mav never take the place of the ordinary sweet oranges as we have them today, but they will certainly be of immense value in placing in the hands of the people of the South a fruit which they can easily grow in their back yards and which will enable them to provide their tables with delicacies heretofore not easily obtainable.

The full story of these oranges is not yet told, for there are many other seedlings to be heard from in the matter of bearing fruit. The hope is that among these will be found hardy sweet oranges. and that thus it will be practicable to establish orange groves again in all parts of Florida.—Prof. B. T. Galloway in Youth's Companion.

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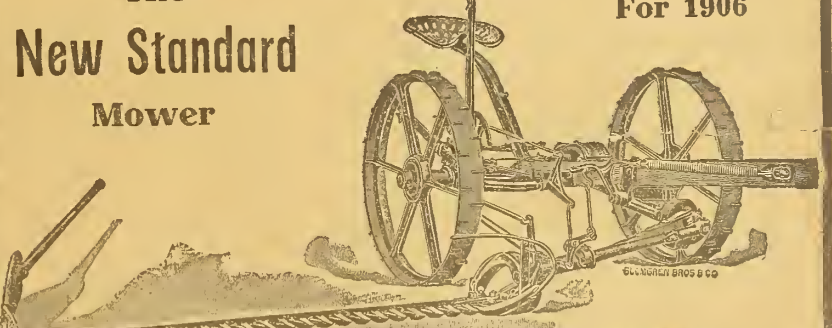

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The Ornamental Garden

BY ERNEST BRAUNTON, LOS ANGELES, CAL.

NATIVE EVERLASTING BOUQUETS.

Cat's tail of the swamps makes a good decoration for large halls and keeps indefinitely if gathered before it is quite ripe. The stems should be cut low enough to retain several leaves. After the leaves are dry they may be painted green.

Several wild plants related to the edelweiss of the steppes and the immortelles make beautiful and lasting decorations. Anaphalis, or pearly everlasting. is common on the fog-bathed ocean slopes, while an equally beautiful gnaphalium is found on the valley slopes. The beauty of these plants lies in the satin-like sheen of the scaly bracts which surround the head of the true flowers. When the plant dries, the bracts bend back, allowing the withered flowers to fall. In one species the greenish disk where the flowers grow contrasts beautifully with the silvery white of the involucral bracts. It is usually best to put a little water in the vase with these plants.

For winter bouquets the stems should be carefully cut when the ripe heads are yet closed. These can be distinguished from the closed heads of flowers that are yet fresh by the protruding, withered corollas. Immediately after collecting, roll the stems up closely in paper. They will keep, thus treated, a whole day. Put them in a vase with water, as you would fresh flowers. In a few days the heads will open. Frail and evanescent as these snow white spheres look, they will keep until the dust has hidden their beauty.

ORRIS ROOT CULTURE.

As is well known, the orris root of commerce is grown almost exclusively in Italy, the chief centers of production being at Florence and Verona. The plants yielding this article are the common species of Iris, especially I. florentina, I. germancia, and I. pallida, cultivated widely as the common fleur-de-lis of many gardens. In many letters. advertisements are cited in which the cultivation of orris root is boomed as a quick road to wealth, and the conditions of the market are described in glowing but entirely misleading terms. One advertisement states that orris root is worth 40 cents per pound, is protected by a duty of 25 per cent., and meets with an annual demand equaling $2,000,000. On this basis, an offer of roots for cultivation is made at an excessive price. As a matter of fact the average price of dried orris root of commercial grade varied between 3.8 and 9.6 cents per pound during the period from 1897 to 1904, inclusive. There is no duty on orris root. The total importation averages about $20,000 annually. During the last two years the orris business in Italy has been in a somewhat dubious state, due to the low price realized and the lack of profit to the grower. Owing to such deceiving statements as above cited, there is a great likelihood that many people will be misled to their financial loss. Some advertisers claim to have the indorsement of the Department of Agriculture, whereas the Department has in no way suggested the culture except on a small scale in a purely experimental way. It is of the opinion that the outlook for building up the orris industry in the United States is at present not good. Although a limited demand may arise for roots for purposes of cultivation, one should not fail to remember that an orris industry can be built up only on the basis of the utilization of the root in a commercial way.

EVERLASTING FLOWER

Sprengel's Cudweed (Gnaphalium Sprengeli) with several other species, form a most interesting group of plants known as "everlasting." Their sole claim to beauty lies in their glistening, snowy whiteness and in a country without winter flowers, would be much appreciated. Some of the more common species grow in all parts of California, so that our people are never at a loss for material in case they wish winter bouquets. Take note of our illustration and look for them this winter.

MULBERRIES

The mulberry is a neglected tree. It possesses decided value in ornamental planting, and some of the varieties are useful for hedges, shelter-belts, and small timber. The fruit has merit for the dessert, and it is easily grown and is produced more or less continuously throughout a period of two to four months of every year. It is especially suited to farm life, for it does not take kindly to the city, and in California is not especially desired by reason of its being deciduous, but in the rural districts it is always amid harmonious surroundings.

SOME ROSES.

One of the most conscientous seed and nurserymen is Theodore Payne of Los Angeles. He has an exceptionably well selected stock of seeds, bulbs, ornamentals and deciduous trees. Just now he is putting in a full line of deciduous fruit trees for local trade. Of ornamentals he has a fine collection but the most complete selection of roses are to be had in his nursery. Later he expects to get out a complete catalogue of his stock which will be invaluable to planters.

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First National Bank, Los Angeles, Cal.

In the Vegetable Garden

BY ERNEST BRAUNTON

THE GARDEN MOLE

The common garden mole is not altogether destructive as they feed entirely on insects many of which are, to the farmer, most serious pests. Aside from the destruction of insect pests, they stir the soil in corn, and alfalfa fields in a beneficial way.

They seldom eat grains of newly planted corn. Much of the damage in this direction, so often attributed to moles, is really done by species of mice that follow in their runways. It is also true that moles sometimes kill young plants and trees by cutting off their roots just below the surface of the ground, but this is not by way of getting food, but solely because the roots are in the way of the animal's progress.

RADISHES

The radish is desirable every month in the year. They are easily grown, mature in a short time, and can be used as a catch crop at any place in the garden. They are often planted between rows of beets, cabbage, cauliflower, etc., and are marketed and sold before these crops demand the intervening space. By sowing at intervals of two to four weeks apart, they may be had fresh for the table or market, throughout the year. The best variety for one gardener may not be the best for another, as the choice of color, form, size, etc., depends upon the consumer; the red, however, appears to be the more popular color.

VEGETABLE SOILS

Light sandy soil and sandy loam are particularly well adapted to the production of vegetables. These soils will produce an abundance of early vegetables in whatever locality they may be found. These soils also give up their fertilizer readily, hence respond quickly to any change in the necessary elements. We may, by judicious selection, find nearly an ideal soil for this purpose in every county in the State. There are, however, other conditions, as those of temperature and moisture, that need to be taken into consideration.

CHINESE VEGETABLES

Various garden vegetables have been introduced into this country by the Chinese, some of which are worthy of a place in American gardens.

The best known and perhaps the most valuable of these new vegetables is the Pe-Tsai, or so-called Chinese cabbage. This plant bears a loose lettuce-like head of crisp leaves, which may be used in all the fashions in which cabbage is served. This plant requires a cool and moist soil in which to make its best growth. It is essentially an autumn vegetable.

The Chinese mustard is an excellent plant for greens and produces an enormous amount of herbage. Its culture demands the same attention as that advised for Pe-Tsai.

California Peppergrass appears to be a finely cut-leaved form of a mustard long known in old gardening books. It is one of the best of all plants for early spring greens. Although the species is cultivated in China and Japan, it does not appear to have been independently introduced from those countries in recent years. It is not known how or when the plant first came into this country.

Other mustard-like plants recently introduced from China are the Pak-Choi, used as greens and for the white thick leaf-stalks; and the Tuberous-Rooted Mustard, grown for its small turnip-like root. These plants possess less merit for American gardens than the foregoing species.

BUSH BEANS

There are numerous varieties of bush beans, and the variety to be selected depends upon the use you desire to make of them. They vary as to earliness, productiveness, color, size and quality. The bean can be grown on almost any soil, but revels best in those comparatively light and well-drained. Never plant too early, as they are liable to be injured by the late frosts in early spring.

CELERY

This is a vegetable that should be found in every garden. At present nearly all our supply comes from the Orange County fields in the south and the San Joaquin fields in the north. Celery is not difficult to grow; the main thing is to select a comparatively level spot in the garden and to enrich it with well-rotted manure. The plants are generally started from seed in trays or a small bed made for the purpose, and then transplanted into rows in the garden, about six inches apart. In order to make the plants stocky the tops are clipped back when young. It is always desirable to have the soil as moist as possible.

A SIMPLE SEED TESTER.

A circular from the United States Department of Agriculture describes the simple method of testing seeds. The circular states:

As long as seedsmen disclaim any form of guarantee with seeds they sell it is necessary for the purchaser to be able to estimate the quality of what is offered. The percentage of seed that will grow can easily be determined by means of a simple tester. Mix the seed thoroughly and count out 100 or 200 seeds just as they come, making no selection. Put them between a fold of cotton flannel or some similar cloth, taking care not to let the seeds touch one another. Lay the cloth on a plate, moisten it well, but do not saturate it, cover with another plate and keep at a temperature of about 70 degrees F. On the second and third days take out and count the sprouted seeds. Good seed should germinate 90 per cent. or more in three days.

KEEPING POTATOES.

The best way to keep seed potatoes is to put them in a dark and dry place with even temperature. Cold storage is the ideal location, and the best results will follow that method, and when that is not practicable it is best to come as near to it as possible. Absolute darkness is better than light, other conditions being equal.

CHINESE CABBAGE.

The Pe-Tsai, or Chinese cabbage, is no longer a novelty in American gardens, although it does not appear to be well known and its merits are not understood. Its cultivation and peculiarities were described in France so long ago as 1840 by Pepin, who says that, while the plant had been known in botanic gardens for twenty years, it was brought to notice as a culinary vegetable only three years before he wrote. It appears to have attracted little attention in Europe, however, until very recent years. It began to attract attention in the United States probably about fifteen years ago.

Fortunate Indeed.

An old darky was taken ill, says the New York Times, and called in a physician of his own race. After a time, as there were no signs of improvement, he asked for a white doctor.

Soon after arriving, Dr.——felt the old man's pulse, and then examined his tongue.

"Did your other doctor take your temperature?" he asked.

"I don't know, boss," replied the sick negro. "I hain't missed anything but my watch as yet."

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Value of Reforestation.—Our government is probably expending more money both for labor and literature, toward educating the people of California to a proper appreciation of the value of reforestation than is the case with any other project in which our people are interested. Notwithstanding the continuous efforts of the Forest Service in calling attention to the value of this work, both for the conservation of our water supply as well as for the production of much-needed timber, our farmers seem inexcusably negligent in not taking up the matter as individuals.

The Forest Service stands ready to aid everyone owning "watershed" lands that are in need of tree planting, where such lands contribute, even in a slight degree, to the local water supply. Aside from its economic value, the reforestation of our bare hills and mountains would change many sections from bleak, inhospitable landscapes into charming woodlands, a transformation "devoutly to be wished" and of inestimable value to both individuals and the State.

Not only should we have our hills dotted with majestic pines and cedars, but these may easily be accompanied by fitting retinues of smaller trees and shrubs. It has long been a matter of common knowledge that we possess native trees, easily procured, of unquestioned value in this work, but of late the study of our "chaparral" has led to fruitful practical conclusions. It shows remarkable ability to encroach upon and spread over open country even in semi-arid sections. It makes a satisfactory water-shed covering and almost constantly replaces a forest destroyed by fire. The seeds of the shrubs composing this "chaparral" are produced in abundance, are easily collected, as easily started and transplanted and those so planted soon surpass in growth and vigor the naturally sown plants.

To one who have given the matter serious consideration it seems almost incredible that owners of hill and mountain lands make no effort to enhance the value of their holdings by this simple and economic method of reforestation. The government plantings during the past few years have demonstrated beyond the point of experimentation, the value of certain trees and shrubs for the different sections of the State. Now that intelligent and effective work may easily be done by the individual without risk of failure, our foothill farmers should avail themselves of this priceless opportunity to add beauty and value to lands at present practically worthless. If the efforts of the Forest Service in this campaign of education results eventually in the transformation of our denuded hills and mountains into water-conserving lands, it will be of incalculable value to our whole people.

* * *

Government Control of Life Insurance—In a letter to the Editor of the Cultivator, John Tuohy, a leading agriculturist of the San Joaquin valley, makes the following well-timed observations in reference to the "thievery" practiced on the public by Life Insurance Companies of the present day. He says:

"In reference to the thievery which has been practiced in Life Insurance, all of which the public will never know, much is said, and a little is being done, on lines of reform. Is the effort on right lines? I think not, but I think not for the reason the public at large has not given the subject the consideration it deserves.

There is no gainsaying the fact that old age, too often brings with it want and this want should be provided against. A general system of Life Insurance will be the proper provision, but this can be attained only by a Government Insurance System. The State Grange Patrons of Husbandry of California advocates this, and by a governmental system only can life insurance be made safe, economical and effective. Let those who want to, call this socialism. It is true and right, nevertheless."

* * *

Prof. Wickson's Report.—The Cultivator referred last week to the report of the Commission selected to locate the College farm in California. Prof. E. J. Wickson of the University of California heads this commission and has devoted a great deal of labor to the examination of sites to secure a suitable one. In the report he presents to the Governor, he states with much cogency the conditions essential in his judgment to a proper selection of a farm site. His requirements are first, widest representation of agricultural conditions; second, absence of conditions which make any locality a special one with reference to productions; third, proximity to some considerable center of population. "According to these standards," says the Professor, "this location should be made from the most available offerings near Modesto, Stockton, Woodland or Dixon."

The Sacramento Union, in an editorial, warmly commends the work of the Commission as being "close and intelligent," and adds: "The Union which has from the beginning, followed this matter with great interest, is glad to commend a judgment which has sifted down a multitude of offerings to the four which he regards as ideal, or at least, extremely good. We will not pretend to expert knowledge, but can only express the hope that choice will fall upon a tract either in Yolo or Solano counties in the region dominated by Woodland of by Dixon. There would seem to be special propriety in giving the choice to Yolo county, due to the fact that it has been active from the beginning in the work of securing a State farm. It is to be remembered that a representative of Yolo county was the first to move in this enterprise and that from the beginning Yolo county influence has been an active and aggressive force in promotion of the farm project."

* * *

Raisin Growers Disband—The Raisin Growers' Association of the Fresno district has disbanded. The cause is stated to be the unsatisfactory price raisins were fixed at by the directorate. Failing to sell at the figures named, the entire product left in the warehouse went at 3 cents a pound. Of course this meant demoralization. It is to be regretted that the Association has disbanded. It could have derived better results from co-operation than by individual selling. Now each grower must shift for himself and that means competition of the most disastrous sort. We trust a new association may arise which will have less or no friction in its ranks, and that the discordant elements which have been the cause of the breaking up of the present association will be kept out of the reorganized body. More can be accomplished by co-operation, with honest management, than by individual effort which always promotes strife and disastrous competition.

* * *

Politeness.—If young girls and boys could be taught the value of politeness, how much more attractive they would be. The nice little habit of lifting the cap, which the boy can so easily become used to, makes him always the object of pleasant remarks by ladies and gentlemen whom he passes. The girl who smiles as she passes you on the street is always remembered for her "pretty ways." Parents can do as much toward making future amiable men and women as teachers in our schools. Why do they not pay more attention to the cultivation of politeness in their children? It certainly pays to do so.

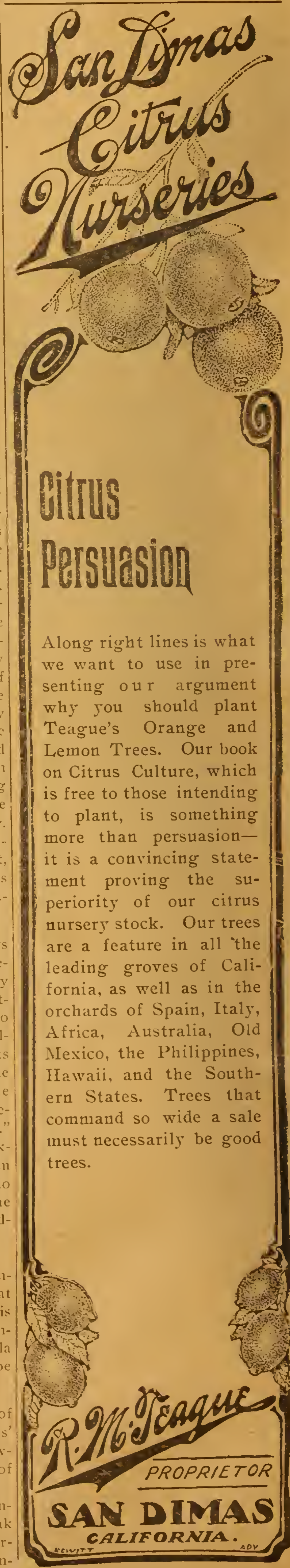
* * *

Farmers' Institute—A Farmers' Institute will be held by Mr. Neff at Corona the 26th and 27th of this month. Prof. Ralph Smith of the University, C. C. Teague of Santa Paula and J. W. Mills of Pomona will be instructors.

* * *

The Fullerton News, in speaking of the work being done at the Farmers' Institutes this season has the following complimentary word for one of its leading instructors:

"Mr. Ernest Braunton of Los Angeles, was in the city to speak before the Farmers' Institute on "Ornamental Tree Planting." Mr. Braunton is associate editor of the California Cultivator, and a special contributor to the Los Angeles Times and Country Life (New York). Although still a young man his nineteen years study of street and garden ornamentation has proven him an expert, and his writings on matters of this sort are recognized as authority and are of especial interest."



Citrus Persuasion

Along right lines is what we want to use in presenting our argument why you should plant Teague's Orange and Lemon Trees. Our book on Citrus Culture, which is free to those intending to plant, is something more than persuasion—it is a convincing statement proving the superiority of our citrus nursery stock. Our trees are a feature in all the leading groves of California, as well as in the orchards of Spain, Italy, Africa, Australia, Old Mexico, the Philippines, Hawaii, and the Southern States. Trees that command so wide a sale must necessarily be good trees.

NEWS OF COUNTRY LIFE IN THE GOLDEN WEST

HORTICULTURE.

One of the biggest walnut orchards in Southern California (150 acres) will be planted in Chino this spring.

It is estimated that about four thousand acres are being planted to vines in the Lodi district this season.

Arbor Day this year called out very general observance. It ought to have been observed by every town in the State.

The United States during the past few years has consumed on an average 100,000,000 pounds of California prunes.

Cut worms are destroying trees set this spring in the territory north of Bakersfield. An antidote should be used at once.

W. R. Mansfield of Brawley has 40 acres in year-old Malaga grapes and this spring is setting out 35 acres of the same variety.

The warm weather is forcing fruit trees around Marysville ahead too rapidly at present, and some are already in bloom, while others soon will be. It is feared the frost will damage them.

The setting out of Malaga grape rooted vines and cuttings now divides importance with the cantaloupe seeding activity, about five hundred acres being in process of planting to the Malaga at this writing.—Submarine.

The Pomona Progress has this to say about the market. "The citrus market is getting back in shape after congestion of heavy early January shipments. Prices are advancing and free shipments are beginning again. Estimates of the season's output continue to decrease. It now looks as if it will fall 4000 carloads below season of 1904-05.

A Fresno dispatch of the 19th says, "At a mass meeting of the California Raisin Growers' Asociation today it was decided to discontinue all functions, the association to pay back to growers all money in the packing house and organization funds. The association will continue its legal existence to avoid expense of disincorporation and of incorporation in case of future organization of the raisin growers. The practical result is for disbanding, though the corporate existence may be employed in a revival by voluntary signature of contracts by growers to sell on a basis of 3 1-2 cents in the sweat box.

AGRICULTURE.

The cotton crop of Mexico in 1905 is estimated at 90,000 bales.

The Wagner Bros., of Anaheim, are preparing to plant 200 acres of potatoes this spring.

The beet-sugar factories in operation in the United States in 1905-6 amounted to 53, as against 6 ten years ago.

Manager Schroeder of the Chino Beet Factory reports beet contracts for 9500 acres, the largest of any except one year.

Grass is beginning to show enough strength on the ranges to partially support stock. another week or two feeding dry stuff will cease.

The grain farmers in this county, says the Santa Ana Bulletin are as happy as a clam at high tide, and declare that the prospect for a big crop was never better.

Shipments of celery from the Peat lands to date aggregate over 1800 cars. It is expected the total for the season will run close to 2000 cars, or about 200 more than last year.

Between sixty and seventy applications have been filed with the Rangers of Government lands for permission to graze stock on the Tahoe reserve. The applicants embrace residents of Sacramento, Placer, El Dorado and Amador Counties.

The largest hay warehouse in the State was destroyed by fire at Hollister last week. The four thousand ton warehouse of the Lathrop Hay Co. was built last year at a cost of $10,000, and was of corrugated iron. $16,096 of hay was burned belonging to seventeen different owners.

The managers of the new beet sugar factory at Hamilton are making contracts with the farmers to furnish them with beets. They agree to pay $4 per ton for beets that have 13 per cent sugar or under, and 25 cents additional per ton for each per cent of sugar over 13. They also agree to give one-half of the pulp to the farmers.

A Placerville correspondent writes that the probable grazing fee for the season of 1906 will be 6 cents per head for sheep and 25 cents per head for cattle and horses. People owning or leasing land in the reserve will be given credit for the amount of stock the land will support and will be charged only for the feed on Government land.

The Crop Reporter for February, 1906 gives the live stock in California as follows: Horses 399,673; average per head, $76.32; mules, 69,679, average per head, $91.30; milk cows, 390,015, value per head $34.65; stock cattle 1,167,107,17, value per head. $17.50; sheep 2,398,439, value per head, $3.03; hogs, 573,522, value per head, $5.45; a grand total of $83,233,256. And yet they tell us that California isn't a stock-growing state.

LIVE STOCK.

The Alta Advocate says, cattle on the foothill ranges are beginning to look sleek and fat.

W. R. Van Dyke of Ukiah, shipped 300 fat hogs to San Francisco, last week and got the top market prices.

The dairy interest of Solano county is to receive a new impetus by the establishment of a large creamery plant in Suisun.

More blooded stock is going into Kings and Tulare counties this spring than at any period in the history of these counties.

Hanford last week had a poultry show, the first ever held there, and from the accounts in the Hanford papers it appears to have been a very successful one.

On Tuesday there were shipped 15 carloads of livestock from Imperial, consisting of 9 cars of goats, 5 of cattle and 1 of hogs. The goats were shipped by Mr. Conant.—Imperial Standard.

The value of the work of the State Fish Commission was particularly exemplified last year, during which no less than 117,000,000 salmon eggs were taken, of which it is estimated 85 per cent will be hatched and released in the rivers of the state.

Arthur Fuller of Imperial says there are over 100,000 hogs in Imperial valley. From stock buyers it has been learned that the monthly shipment averages about 6000. The average price on the present market is at least $10 a head. To sum it up, $60,000 is distributed monthly among Imperial farmers for hogs alone.

MISCELLANEOUS.

Gilroy is to have new railroad stock yards and car shops.

Santa Monica hopes for free mail delivery after July 1st.

So Sam Jones says California has produced no great men.

Kern county will erect a high school in Bakersfield at a cost of $50,000.

Hollywood, only four years old expects free mail delivery by January, 1907.

Elsinore will soon have a city park of which any little city may well be proud.

Lost Angeles lost to Seattle in her efforts to get the great Christian Endeavor Convention in 1907.

A theater is to be erected in San Diego by Los Angeles capitalist. The building will cost $75,000.

A deer driven from the mountains by the cold ran through the streets of Ukiah one morning last week.

During the year just closed the Southern Pacific brought to the state 80,000 more people than it took out.

A Tehama county farmer is shipping home a carload of Polled Angus cattle as the basis of a herd of fancy cattle.

Maywood, in Tehama county, is to have a new creamery, which in turn will be supplied with up-to-date machinery.

B. A. Ramsay, formerly manager of the Daily Cypress. has commenced the publication of the Evening Montereyan, at Monterey.

San Luis Obispo Breeze, says the Brookshire Oil Company is about to close a contract for the sale of 40,000 barrels of oil per month.

Mine owners in Yuma county are protesting to the county supervisors against the maintenance of low drinking places near the mines.

At Chico the school children have a disease of the eyes which physicians term pink-eke. The eye lids swell, the eye-ball becomes blood-shot and in some cases intense suffering follows.

The State Board of Health has declared war on the oyster and suggests the abalone as a substitute. Oysters are now declared to be full of the germs of typhoid fever and also diphtheria.

The Analy Standard says, the Windsor grange has passed strong resolutions asking the Board of Supervisors to employ enough help to put the highways in order. That is right. Let other granges follow suit.

At San Bernardino an association has been formed for the purpose of offsetting the oppressive operations of the Standard Oil Company and its affiliated concern, the Associated Oil Company.

Prof. Wiley, chief of the Chemistry Bureau of the Department of Agriculture. declares that more than a million infants have been sacrificed in this country by giving them impure foods and the various preparations for allaying pain.

That California is a State of magnificent distances is well illustrated by the fact that the newly appointed postmaster at Cima, a new mining town of San Bernardino county, could find no notary public nearer than 200 miles to swear him in.

An immense amount of oil has been shipped from Monterey the last fifteen months, says the Monterey Cypress. The first shipment was made in November, 1904, and ever since there has been an average of four cargoes a week shipped from that port.

PLOWING UNDER PEAS

A question has been asked, whether peas should be plowed under or only disked. The question arises whether by plowing the bacterial nodules are not exposed to the air too much, thereby losing considerable of the nitrogen. This question may be worthy of consideration.

In my opinion I think that the nitrogen gained by plowing under the tops is nearly equal to what may be lost by exposing a few nodules. Furthermore the improvement in the texture of the soil by plowing under the peas is considerable. The soils of California as a rule are poor in humus, and any organic matter added to it is of considerable benefit in improving its texture as well as adding fertility. H. O. Sorkness.

If you would like some Concord grapes and other fine specialties, see the Pioneer Nursery advertisement in this issue.

LINER ADVERTISING

Advertisements in Liner Column will be charged 1¼ cents per word. No advertisement taken for less than 25 cents. Eight words to a line.

LINERS

BLUE ANDALUSIAN EGGS FOR HATCHING, from three noted strains, $2.50 and $3. Incubator lots $7.50 to $15.00 per 100. Mrs. T. R. Griffith, 3111 Walton avenue, Los Angeles.

BRAWLEY NURSERY, ERICKSON & HENRY, Props., Brawley, Cal. For sale. 70,000 malaga cuttings, guaranteed true to name and free of disease: also ornamental palms and shade trees, and all varieties of imported and home grown citrus and deciduous trees. Write for price.

STANDARD-BRED BUFF ORPINGTON Eggs, $2.00 and $3.00. Fertility guaranteed. N. Hayden, Altadena, Cal.

BLUE ANDALUSIAN CHICKENS, EGGS for setting, $1.50 and $2.00 per 15: fertility guaranteed. Write for prices on our Line Bred Squab Breeding Homers. J. W. Peckham, 1716 West 20th street, Los Angeles, Cal.

FOR SALE—PUMPING OUTFIT. A NO. 4 Byron Jackson pump and 15 H. P. gasoline engine. Address J. B. French, Secty. Orange Grove Tract Water Co., Pomona, Cal.

SUPERIOR ACETYLENE GENERATORS
ADD COMFORT AND VALUE
Give you the most perfect light and heat. No smoke nor soot.
Our Generators Guaranteed. Write us for full particulars.
SUPERIOR LIGHT AND HEAT CO.
151-53 North Clarence St. Los Angeles

Live Stock and the Dairy

BY MRS. MINNA E. SHERMAN, FRESNO, CAL.

FEEDING

This is an old subject, yet it never seems to be exhausted, for as long as people are taking up dairying as a pursuit, the elementary work will have to be gone over with each lot of beginners. The knowledge of food values in practical work enables one to buy at an advantage, for when one kind of food is high in price, another of nearly equal nutritive value may be cheap. When food is grown at home, conditions one year will give a heavier crop of corn and a less one of alfalfa, or the reverse, this being the case the foods purchased must necessarily be varied from year to year. There is also the further check of palatability. An animal will eat more of a food that it likes than of one it does not relish, and the milk production depends directly upon the food consumed.

While to many people a cow is a machine, yet she has well developel personality as an individual and also the inherited characteristic of the breed and to reach the limit of milk production the characteristic or temperament of the cow must be catered to with consideration. When I speak of the different breeds I realize that I am on treacherous ground. I cannot see how fair-minded people can quarrel as they do over the breeds of dairy cows, for there are good and bad cows in every breed, though I believe it easier to succeed with a breed in the like conditions under which it was formed, or the proper environment, still with care any breed will succeed in California. It then comes down to the fancy of the owner, if you like one breed better than another then that is the breed for you, but do not believe for an instant that all the good cows are of that breed, or you will simply be a laughing stock in the eyes of intelligent breeders.

When the cows refuse to eat up clean their grain, watch to see if they are hungry enough to eat freely of hay and straw, for then the grain is not palatable. The Jersey cows I have had all liked concentrated foods, oil cake and grains, with a little bran, a moderate amount of silage and only about half as much hay as the other cows. The Holsteins craved silage, pie melons, beets or extra succulent eating grain best when well moistened. The Durhams also like their food very wet and eat more straw and hay than the other two breeds, leaving silage for hay. The Durham tends to eat too much hay and the Holsteins too much silage. To keep the digestion perfect the cows must eat of hay or straw for roughage.

The cows can be tested to see if they have enough of any class of food by first feeding them all the grain they are paying for, then give access to a yard with manger of hay and silage, timing them as to the length of time they spend on consuming each kind of food. It will also show why some of the cows fail to digest their food, by failing to consume enough hay. These cows fail to regurgitate all the food and it is not chewed over as cud and moistened properly before being swallowed. The remedy is simple, to force them to eat more hay, by soaking the hay and slightly salting it and then putting it under the grain in the manger, reducing the grain until the cow eats it all up clean.

These inarticulate ones have no way of telling us their wants except by their actions. Now if the cows are kindly treated and satisfied with the quantity and quality of their food, they move quietly from barn to field and back again. At one time the Durham cows took to rushing in and out as if hunting for something lost, and seeming dissatisfied with their food. The only thing lacking they were accustomed to have was straw, so I had a lot purchased and when a manger was filled it was eaten with relish and the unrest ceased at once.

* * *

Cows require more of a variety in their food than horses, and at times show strange cravings, eating old sacks and bones. When this morbid appetite occurs it is well to buy some fresh bones from the butcher and after having them ground give each cow a tablespoonful in the grain feed for several days.

The bulletins from the University should be in every dairyman's hands, especially the one on feeding by Prof. Jaffa is useful every day on the ranch. The old idea that book farming is no good has passed away. The cry now is that it is too good! The International Live Stock Exposition at Chicago, where fat cattle are awarded premiums, has proven the work of the Experiment Station to be of cash value. The steers fed by the Experiment Stations were selected in the open markets and fed to demonstrate the value of various feeds, and ways of handling cattle, while exact records are kept to be published for the benefit of the farmers. The fat cattle proved to be winners so often that the contention has been raised by other feeders that as they were selected by experts and fed on State money they should be excluded from competition. This is certainly a great victory for the men of book learning.

We do not in this State make nearly as much use of the University as we should. At the State Farmers' Institute at Berkeley last December, I was more than ever impressed with the ability of the men filling positions in the Agricultural College and their interested willingness to help the farmers in whatever way needed. I felt proud of them on the platform beginning with that brilliant man Dr. Hilgard. There was not one who spoke to us that did not pay for the trip to San Francisco. One thing spoken of is the idea that "cowcollege," as the students call it, was meant to be a term of derision. Dr. Hilgard explained it was affection on part of the student to nick-name anything. These professors are studying the same problems we are working on; we hammer it out in the slow school of experience, they bring trained minds that know just where to attack the problems, and accomplish in a few months the result of a life of experience. It was said by a speaker from the platform that one breed of cattle was more nervous than another in the State herd and that it as shown by their rushing from the barn to the field and back again at night in the same pell mell way. I felt sure that they were hungry for something their ration did not furnish, and in consequence these cows could not be doing their best at the milking pail, for evidently the feed they were receiving did not "stick to the ribs" as the ranch boys express it; the boys themselves give this as a reason why they prefer pork and beans to oatmeal for a working diet.

* * *

Where cows are not thrifty the following will often increase the appetite; mix equal parts of fenugreek, anise seed and ginger, adding to each ounce of the mixture one ounce of flax seed meal, divide into six parts and give one part a day in two feeds at first, and increase until the cow receives the full amount in a day rations, but only continue for a short time as owing to the effects of stimulating the appetite they must be supplied with food that is relished, and the cow should be rejected that proves too expensive.

The desirability of a ration often depends on the fact that it can be home grown. and the expensive item of freight be saved. It is a shame that Indian corn and sorghum are so little grown, when they are the natural balance to alfalfa. The silo should be considered more than it is for the dry season in California is the dairyman's opportunity to reap high prices. The expense from silo is no longer necessary and the latent endorsement of the stave silo comes from Oregon. where at the State Dairyman Association, Mr. H. W. Whiting declares the State silo a success and also a necessity for economic production of milk. At this same meeting the vetch was discussed by Dr. James Withycombe as a forage crop; it has a little more protein than alfalfa hay, being about 23 per cent. I wonder if it is grown at all in California? I tried it once years ago in Fresno county but had a very dry year to contend against and afterwards found that the land grew corn so profitably that I did not repeat the trial.

Any crop that can be grown on the orchard and fed to dairy cows with the concentrated foods, will pay in the returns of fertilizers alone, for the manural value is not injured, but made more valuable by passing through the dairy cow.

BREEDING OF DRAFT HORSES

Secretary James Wilson has this to say concerning the breeding of draft horses:

"The heavy draft horse is one of the most profitable classes of horses that the farmer can breed. The draft colt can be bred with less risk and liability to accident than those of the lighter classes. This is partially due to the fact that the draft bred colt is usually a quieter animal than those of the lighter classes, and thus less liable to injure itself through spirited

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If you had a gold mine would you waste half the gold? Dairies are **surer than gold mines,** yet farmers without separators only half skim their milk. Tubular butter is worth 25 to 35 cents. Cream is worth one cent fed to stock. **Are you wasting cream?**

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STALLION FOR SALE
As I am going out of the horse business. I will sell my ***Norman-Shire Stallion*** at a very reasonable price. Has imported blood on both sire and dam's side; age 7 years, color black, gentle and sure foal getter.
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exercises or playfulness. Furthermore, small bunches and blemishes which detract so seriously from the value of the harness horse or the saddle horse are not considered to be so objectionable in the draft horse. He can also be made to earn his own keep after he is two years old, and his education can be completed on the farm; thus the farmer who breeds him can secure his real market value. In case of the coach horse or the saddle horse the middleman who educates him usually reaps a much greater profit than the man who produced him. This is not true of the draft horse.

Some of the essential points to be considered in selecting a draft horse are good feet and legs, plenty of weight, a well-developed and good style and action. A draft horse without good feet is worthless on any market; hence good feet are the first essential. The hoofs should be large, round and wide at the heel. They should have width, but not be too deep or shallow. The horn should be of good quality, as indicated by its denseness. The wall must be strong and not inclined to be flat. The legs should be well set under the body and possess plenty of substance, as indicated by the quality and amount of bone and the development of the muscle on the fore-arm and gaskins. Weight is an essential point. A draft horse should weigh from 1800 pounds upward—the more the better, provided it is combined with quality and good feet and legs. The body should be deep, wide and strongly coupled as indicated by shortness of back and the muscling of the loin. Good action is essential, as indicated by the length of stride, quickness of step and straightway movement.

Advertising Column for Members
OF THE
JERSEY BREEDERS ASSOCIATION
OF SOUTHERN CALIFORNIA

Organized for the general advancement of Jersey interests, to extend knowledge of their superior merits, for the mutual benefit of members, and to increase the profitableness of one of the State's greatest industries. Breeders are requested to unite with the Association.

BULL FOR SALE

Having sold my ranch I am forced to sell Golden of Biltmore 60082, a grandson of Golden Lad's. Golden of Biltmore is one of the best, ***if not the best*** sire on the coast, several of his daughters less than two years old selling for over $200 each. Highest bidder for next sixty days takes him. If everything is not just as represented, I will give anyone the ***bull free of charge. I sell on merit.***

C. S. Burgess, Riverside, Cal.

La Palma Stock Farm

Poland-China Swine Jersey Cattle
Send for Catalogue
J. A. CAMPBELL, Buena Park, Cal.

Pure St. Lambert Bull
—ST. LAMBERT OF RAMONA, No. 62633,—
heads the Ramona Herd of Registered Jerseys of
Geo. W. Thomas, Riverside, Cal.

The Whiting Jersey Stock Farm Co.

Have moved their herd of Jerseys from San Bernardino, Cal., to the famous Imperial Valley, and hereafter their post office address will be Heber, San Diego Co., Cal., from which they will conduct all their business. Abundant green feed every day in the year will be of great advantage in the best development of our young stock.

Whiting Jersey Stock Farm Co., Heber, San Diego Co., Cal.

LEMONITA HERD

Leffingwell Rancho, Whittier, Cal.

Service bull "SARGENT FOX," 64833. Bred on the Island of Jersey. Sire, the great Flying Fox, that sold at auction for $7,500. Dam, Miss Sargent, reserve winner over Jersey; winner of seven first prizes and five championship cups. "One of the grandest cows the island has ever produced."

VENADERA HERD
OF REGISTERED JERSEYS

Offers for sale three richly bred heifer calves sired by Marigold's Exile King, out of good cows. Also a yearling son of the great cow Nettie Underwood, official test 10,992 lbs. milk, 668 lbs. butter in one year. For records and prices write

GUY H. MILLER, RIVERSIDE, CAL.

Jersey Mead Stock Farm

HIGH CLASS REGISTERED
JERSEYS, POPULAR
STRAINS

GEO. E. PLATT, 316 E. 8th St., Los Angeles, Cal.

Oakhurst Jerseys

Sons of imported Golden Marquis out of prize winning and tested dams. for sale.

L. Bradbury Duarte, Cal.

Kings Victor King of St. Lambert

At head of herd. Young stock for sale.
H. N. WILLIAMS COMPTON, CAL.

BEDDING FOR COWS.

Wheat straw is quite generally and satisfactorily used as bedding material for cows where dairying is carried on in connection with general farming. Where dairying, however, is the principal industry of a farm the supply of wheat straw is likely to be deficient and the question of securing bedding material becomes then and occasionally at other times an important problem. To gain information as to the value of various substitutes for wheat straw was the object of experimental work conducted recently by C. F. Doane at the Maryland Experiment Station.

Sawdust was found the most satisfactory of the bedding materials tested. Unfortunately, it is not always available, and objections have been raised to sawdust manure. Shavings were found to be almost equally as good as sawdust; but the same objections have been made to shavings manure as to sawdust manure. The tests indicated that about 1100 pounds of shavings would be required yearly per cow. "For strictly sanitary dairy, sawdust or shavings are the ideal bedding materials, though the ordinary dairy farmer could not be advised to buy when he could raise the straw."

The absorption tests were made in the laboratory, and judging from the amount of water capable of being absorbed by each of the materials used, it was established that 2.8 pounds of cut stover, 3.3 pounds of wheat straw, 8.3 pounds of sawdust, or 3 pounds of shavings would be required to absorb the liquid manure produced by one cow in sixteen hours. The yearly cost of bedding at local prices was estimated at $2.25 for cut stover, $3.11 for wheat straw, $0.30 for sawdust and $3.28 for shavings where cows are stabled sixteen hours per day, or $3.65, $4.15, $0.45, and $4.81 respectively, where the cows are stabled the entire time.

MANAGEMENT OF A CALIFORNIA HERD.

Writing in the Jersey Bulletin, J. E: Thorpe, a Stockton dairyman says: "As to our methods of feeding and handling our stock; Since being in the retail milk business, milk and cream are the aim when we cite at the finished product produced by the cow. Some might ask, why is it that you do not use Holsteins, Shorthorns, etc.? To those I will say than any cow, no matter of what breed, will answer, so long as she produces milk that will hold our customers and make a nominal profit over feed and investment. And we have found that by their persistent labors the Jerseys or their grades answer better than any so far tried—and besides, satisfy that idle fancy for the superb Jersey that lingers within me.

To reach the end—product—we must feed. For no animal, man or cow, can work to capacity without feed. We aim to feed all cows at once, as they seem more contented and quiet, and at this period they are milked, as we have no time to milk after feeding, since the delivering of the milk must be done on schedule time.

When the cows are first brought into the barn they are fed chopped alfalfa hay, with wet malt and bran, to the extent of about 40 pounds per fresh cow, according to individual production and capability to handle the food. This food is mixed just moist enough not to drip the water, and allowed to stand about four hours, in which time the alfalfa becomes very green and quite soft. After they finish this course they are fed alfalfa hay until they force their capacity.

We tempt them about three times by throwing out the worked-over hay (which is used by running through the cutter for mixed feed) and putting before them the best of the hay. They are allowed to run to bean straw stacks, and graze upon whatever they might find in our pastures.

In the spring when grass is plentiful, of course they eat but little hay or mixed feed, but at this season they take quite readily to the stuffing process. We try to milk them at even hours, 3 a. m. and 3 p. m. and in rotation.

Alfalfa does not attain maturity until the third or fourth year; therefore, do not sow it expecting to get the best results in less time.

Alfalfa grows best on a deep, sandy loam, underlaid by a loose and permeable subsoil. It will not grow if there is an excess of water in the soil. The land must be well drained.

Cut hay when the first flowers appear. If cut in full bloom the hay will be woody and less nutritious.

Cut for seed when the middle clusters of seed pods are dark brown.

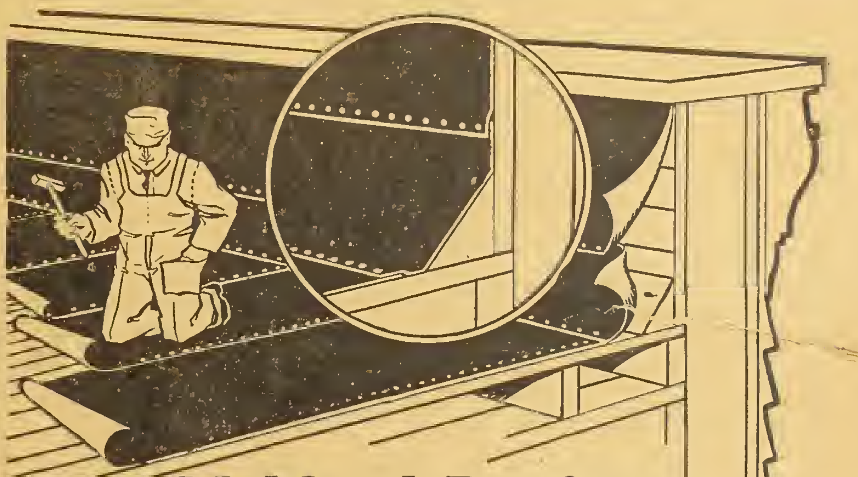
To make alfalfa hay cut in the forenoon and let it wilt; then rake into windrows. It should be cured in windrows and cocks, and stacked or put in barns with as little handling as possible, before the valuable leaves become too dry or brittle.

It is not safe to pasture either cattle or sheep on alfalfa, as they are liable to bloat, when it is fed green. Feed them the hay or practice siloing.

There is no better or cheaper way of growing hogs than to pasture them on alfalfa. One acre will furnish pasturage from for ten to twenty hogs per season.

Horses can be pastured on alfalfa.

Alfalfa is a perennial, a clover-like plant, with oblong-shaped leaves and a taproot which often extends eight or more feet downward. The plant grows to a height of from two to five feet and its blossoms are purple in color, borne in long, loose clusters.



Malthoid Roofing

is a non-conductor of heat and cold. It keeps out cold in winter and the heat in summer. If you want healthy, thrifty stock give them a dry, comfortable house—it pays. Cover your cattle sheds and hog houses, chicken coops and sheep folds, your own house too with MALTHOID, and they will be water-tight, wind-tight, blizzard-tight and heat-tight.

MALTHOID is better than shingles Shingles cost more than MALTHOID. They take more time and more trouble to lay; they warp and curl, crack and decay. They burn easier than anything else about the building, while MALTHOID is a protection against fire. Shingles leak sooner or later; a MALTHOID roof never leaks. Shingles won't keep out the cold and heat.

MALTHOID is better than tin Tin is very expensive; it takes skilled labor to lay it; it has to be repainted about every year. MALTHOID you can lay yourself; paint once in three to five years is enough. Tin sweats and rusts and is no end of trouble. MALTHOID is a satisfaction to everyone who makes his roof of it.

MALTHOID is better than iron Iron rusts; it contracts with the cold and expands with the heat and wears out. In summer it makes the place beneath a regular hot house. MALTHOID keeps out the heat and is absolutely tight all of the year.

MALTHOID is better than other prepared roofing MALTHOID is made by the company that originated the first prepared roofing—P & B Ready Roofing, and they have been making roofing for 22 years. MALTHOID is the result of the best roofing knowledge in the country. Made by the most experienced manufacturers of roofing in the world.

A book of views of Lewis & Clark Exposition Buildings free on request
THE PARAFFINE PAINT CO., San Francisco, Cal.
Sold by Agents and Dealers Everywhere.

Los Angeles Office at 313 No. Los Angeles Street

Profit in the Poultry Yard

BY MRS. A. BASLEY, HOLLYWOOD, CAL.

MATING FOR RESULTS

Dr. S. L. Roberts remarked when speaking of mating for eggs, "One can make any stock that one will. It may take time and patience, but when a great object is attained the value of the attainment more than pays."

Like produces like. In every good flock of fowls will be found a few exceptionally good layers. Breeders know this, but they rarely take measures to perpetuate this good quality and make it a prominent characteristic of the whole flock. Amongst these extra good layers will be found in the same flock drones, idlers, that scarcely lay at all; that eat far more than their few eggs will pay for and are kept at a loss to their owners. Every one of these should be found and sold for meat. Like produces like. What folly to breed from them!

But in the same flock are moderate passible layers. What about them? They should never be used as propagators of laying stock. The best is none too good. These moderate layers will have as offspring stock scarcely as good as themselves, usually inferior, seldom superior. Breeders who want to produce a strain of fine layers, a "breed-to-lay-strain," cannot afford to breed from even moderate layers. Like produces like.

Breed from only your best layers, if is eggs that you want. There may be only one or two extra fine layers in your flock. Save every egg from them to build up your flock of great layers. This may seem slow at first, but after the first year you will have their pullets, many of which will be quite equal to the mother, and by keeping the males from these great layers you will in a very few years have "bred-to-lay" fowls, which will pay you in money and pleasure.

Like produces like! One can make any stock what one will by breeding correctly.

* * *

"Will you not write an article on breeding?" writes a lady last week. Breeding is such a big subject, such an intensely interesting subject that it would take more than an article to tell about it, and years of study to follow it all out, but there are some points which we can suggest, even in a short article, which may be helpful especially to the novices, for there are many of them in our midst.

Sometimes I wish I were a novice myself again, for the poultry business is such interesting work!

The subject of breeding for the best results is one of the most interesting and important in the poultry business, just as it is in cattle and horses. This is being recognized more every year in the poultry business.

There is "line-breeding," and "in-breeding," "out-breeding," "cross-breeding," and "no-breeding" at all!

"In-breeding" is quite a bug-a-boo with many. By "in-breeding" is usually meant, or I might sav, is always, keeping the same stock, breeding promiscuously year after year, brother and sister together any how. By this means the flock will deteriorate, the eggs fewer and more infertile. In such a flock the best birds have usually been sold off because they would bring a good price, and anything will do to breed from is the plan there. Just as well keep small potatoes for seed as some do, or "nubbin's" of corn, or the poorest of the berry plants for propagation.

Like begets like. Vigor produces vigor. If you even "in-breed" from brother and sister time and again when they are strong, vigorous birds (I know a man who did this) they will still produce vigorous birds.

"Line-breeding," or breeding in line is a careful and systematic "in-breeding." It is keeping to the same family and is what all the leading breeders advocate and practice.

To illustrate what is meant by "line-breeding" I would take a good pair or trio of thorough-bred fowls, or of my own best layers. The second year I would mate the father to his daughters and choose the best of the sons to mate with the mother, and use these two matings as two different strains for new blood, each year selecting the best from either pen. By the best I do not mean only the handsomest. I mean the most vigorous, active and up to standard requirements of the cockerels, and in the pullets the best layers, the active, vig-

WHY HENS DON'T LAY

When well cared for and well fed, is because they need waking up to start egg production. This comes naturally in the spring—the natural mating season. In winter you have to give something to stimulate them. Without this they are stupid, lazy and dull. Mix **SECURITY POULTRY FOOD** in their rations. It will give them life and activity and shortly your hens will be laying. Don't wonder why they don't lay, but get Security Poultry Food from our dealer in your town and feed it.

WE WILL REFUND YOUR MONEY
if you are not entirely satisfied.

SECURITY STOCK FOOD CO.,
Minneapolis, Minn.

Young Half-Wild Turkey Gobblers For Sale

Turkey Eggs from pure bred Mammoth Bronze, $4 per 13

Mrs. N. Frank Moise - Fullerton, Cal.

White Plymouth Rocks

First class stock. Eggs, $1.00 per 13, $2.00 per 30. Indian Runner Ducks—$1.00 per 15, $2.00 per 33. A few ducks for sale. **H. S. Thompson, 125 W. Avenue 54, Los Angeles, Cal.**

White Wyandotte Eggs

For hatching. Pure Dustin & Hallack strain. From 1st Pen, $3.50 per setting, 2nd pen, $2.50.

Mrs. S. H. Church, 505 S. Main St., Los Angeles

Buff Orpingtons

Pen headed by second prize winner at Alameda, '05. $2.00 per setting of 14 eggs.

MRS. ALBERT MILLER,
1913 Ricardo St. Sta A, Los Angeles, Cal.

Fairview Poultry Yards

W. Plymouth Rocks S. L. Wyandottes

At the recent Los Angeles show our Wyandottes won as follows: 1st cockerel, 1st, 2nd and 3rd pullet, 4th cock. But 5 entries made. No Rocks shown. Special mating of White Rocks, pen headed by Fairview Prince, a son of the best laying hen in our yards. Eggs, either variety, $1.50 per 15. Eggs from utility pens, $1 per 15. ***A. E. Nelson, El Monte, Cal.***

Single Comb Brown Leghorns

Exclusively

Stock for sale and eggs for hatching. Eggs from first pen $2.00 per 15 eggs, second pen $1.50 per 15. Incubator lots for $6.00 per 100 eggs. They have always won first prize whenever shown. Large birds and heavy layers.

W. E. Mercer - - Ventura, Cal,

WILLARD POULTRY FARM, HYNES, CAL.

Mrs. F. T. Hungerford, Manager

INDIAN RUNNER DUCKS

At San Fracisco show, 1905, I won 2nd and 3rd on young drake and 1st on young duck, with 3 entries. At the 1906 Los Angeles show, 1st on old drake, 1st and 2nd on young drake, 1st and 2nd on young and old duck and 1st on pen. Eggs $1 for 13, $3 for 50, $5 for 100. Hens' eggs all ordered up to April 1st.

S. C. White Leghorns

I can furnish you with first-class eggs that will hatch strong, vigorous chicks, and give you satisfaction. $2.00 per 15, or $7.00 per hundred. Stock for sale.

Monte Vista Poultry Farm
L. D. Pettit, Mgr. ***Corning, Cal.***

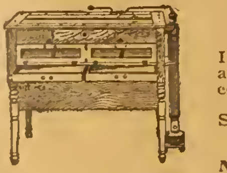
Emery's Pure Meat Meal

Don't believe all we say, but just enough to buy our Poultry Foods

Ask your nearest dealer for them and take no imitations

Emery's "B. B. & B."

THE PACIFIC GUANO & FERTILIZER CO. Successors to N.Ohlandt & Co San Francisco, Cal.



The Stockton Incubator

Is now manufactured under new management and is in every way put up as a first-class machine. Our 1906 model is a perfect working incubator, economical to run and gives a fine hatch.

Winner of silver medal at Pan-American, also medal at California State Fair. Write for circular and information.

Stockton Incubator Co.
Marshall & Barnes, Props. Stockton, Cal.

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MARDEN EGG FARM

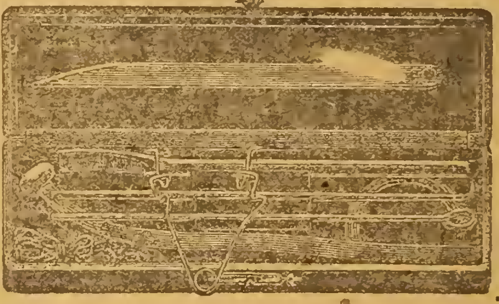
HYNES, CALIFORNIA

Breeders of S. C. White Leghorns Exclusively

Fine Feathers alone do not make the profitable hen. Our fowls have the reputation of being ***extra large, handsome*** and ***extra heavy layers.*** Last season, our eggs averaged over 95 per cent. fertile. ***Remember***—In getting eggs from us, you do not get them from the general runs. We have but one grade of eggs to sell for hatching and those are from our breeding pen composed of only the choicest fowls, selected from hundreds that are ***bred to lay.*** Hens that approach the ***200 egg record.***

Price of Eggs—$1.50 per 15, $5 per 100. ***Send for Illustrated Catalogue. Address,***

LEO. W. MARDEN, Manager



Caponizing Set

Double Your Profits by Caponizing.

Complete with Instructions, $2.50, Postpaid

STOCKMEN'S SUPPLY CO.

FRESNO, CALIFORNIA

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK

BUYS THE WORLD'S FAMOUS EGG FOOD NO. 4

MIDLAND

IF YOU WANT EGGS
YOU WILL FEED NO OTHER

Used by all the largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the **GOLD MEDAL** at the St. Louis World's Fair for greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1604.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A FILCHER, Commissioner.

And Now Comes New Reward for Merit:

Read the following telegram received from the Lewis & Clark Exposition at Portland:

"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

PETALUMA INCUBATOR CO.

Main Office and Factory, Petaluma, Cal., Box F. Los Angeles, 505 South Main Street
San Francisco Office and Salesroom, 33 Market St.

HUSKINS' WHITE WYANDOTTS

Prize winners for two years, 1905 and 1906, at L. A. Eggs for hatching from standard bred stock, $1.50 per dozen, or if you mention Cultivator, will send thirteen.
A. W. Huskins, 713 Waterloo St., or 541 South Main St., Los Angeles.

Rhode Island Reds

Record making layers; average per hen, whole flock, 180 eggs for '05. $1.25 per setting, 2 settings, $2.00; incubator lots, $6.00 per 100.
J. S. ENGLISH, R.F.D. 112, Gardena, Cal.

BRONZE TURKEYS

Hart's strain. Winners of five firsts at Los Angeles Show, '06, and always winners wherever exhibited. Write for prices.
ED. HART, CLEMENTS, CAL.

White Plymouth Rock

Eggs from standard stock, $1.25 per setting, $6 per hundred. **Mrs. N. C. Hansen, Coachella, Riverside County, Cal.**

Fruit and Poultry Ranch For Sale

10-acre fruit and poultry ranch, fenced; 14 correls, including alfalfa, 400 deciduous fruit trees; wood for fuel; 6 room house, barn and windmill; close to railroad town. Bargain, easy terms.
J. C. Peters, Owner, Hemet, Cal.

White Plymouth Rock Poultry Ranch

Eggs for hatching from First Class Stock $6.00 per 100, $1.50 per setting 15 eggs.
J.T. DAVIS, Prop. POMONA. CAL.

Brown and White Leghorns

Prize winners at L. A. Show, '06. Eggs from good laying strains. Eggs, special matings, per 15, $2.00. Incubator lots, $6.00 per 100.
Hemet Poultry Yards, Hemet. Cal.

Blue Andalusian Eggs

$1.50 and $2.00 for 15, $7.00 per 100. Free range. I raised and sold cockerel winning first prize at late L. A. poultry show. Stock. ***Mrs. J. S. Duff, 3145 S. Hoover St., Los Angeles, Cal.***

WHITE AND BUFF Leghorns

Old and young stock for sale. Eggs after January 1. Write for prices.
J. F. Sarmento, R.F D. Box 4, San Leandro, Cal.

Rhode Island Reds

Fine stock of cockerels and hens for sale. Eggs, $1.50 per setting.
C. E. DAVIS, REDLANDS, CAL.

EGGS FOR HATCHING

from a heavy-laying strain of

SINGLE COMB WHITE LEGHORNS

I guarantee 100% fertile. Write for prices.

Golden State Poultry Yards, Lordsburg, Cal,
T. E. Mills, Prop. Home Phone 1720

FOR SIX YEARS

Albers' Black Minorcas

Have led in the shows every year, and they lead all breeds in egg production all the time. Eggs in large or small lots. Stock for sale Circular free.

GEO. R. ALBERS
4849 MARMION WAY LOS ANGELES, CAL.

White Leghorn Eggs for hatching, in incubator lots only, at Ten Cents a dozen over Los Angeles market quotations. **Avenue Poultry Yards, Ventura, Cal.**

30 DAYS TRIAL
Buy From Our Factory—Save One-Third.
PRACTICAL INCUBATORS positively the best. Hatches more and stronger chicks. **10 YEARS' GUARANTEE**
Cat. free. PRACTICAL INC. CO., 720 S. 11th St. San Jose, Cal.

orous egg-type birds. "Close observation and close selection" is the rule in line-breeding. The fear of in-breeding if they follow line breeding leads many people to think it absolutely necessary to have new blood in their flock every year, and here danger lies, for those who are breeding thoroughbreds for a purpose. To illustrate, I knew a famrer's wife who had some fine Plymouth Rocks she was anxious to have prizewinners so she sent away for a first prize winner. She paid a good price for him, got a beauty. She thought she would have prize winners from him in time for the next show, when to her grief she found that all of the progeny of that cockerel were disqualified birds. That cockerel did not"nick" with her hens, although they were of the same breed. This lady was "out-breeding;" that is, she was taking an outsider, of the same breed, but of a different strain or family and made a failure of it. "Out-breeding," as she did is a sort of gamble, one cannot be certain of the results.

"But," said one lady to me, "I am afraid of in-breeding, and the book says change cockerels with your neighbor." I do not know what book she was quoting, but I went to see her fowls. She had really fine birds to commence with, but had ruined her flock by trading cockerels. I will tell you what I did, after trying different methods. When I wanted new blood every year for some pen. I bought a setting of the best eggs of White Plymouth Rocks from the best breeders I knew. From this brood I selected the two best looking pullets and mated them to one of my own males. Some years the pullets proved good layers and up to standard; if otherwise, they were consigned to the table. When the result was good I had new blood which I knew would not deteriorate my fowls in regard to standard looks, but I could not know for two years how it might affect the laying quality of their offspring. Here is the place where "close observation" came in. I trap-nested every hen on my place. The new blood had to be trap-nested and then if they came up to my ideal I had the satisfaction of knowing that this "out-crossing" was a success.

Next week we will continue the subject.

* * *

EDITOR'S QUESTION BOX.

Barred Rock Eggs.—(H. J. J.) Editor Cultivator: I have been told that Barred Plymouth Rock eggs do not hatch well in an incubator. Will you kindly state if this is the case, and if so, why? Do you think the moisture pans should be filled sooner than the fourteenth day? Can you tell me where I can get the Danysz Virus for the destruction of gophers? Kindly answer these questions in next week's Cultivator. I have just lately subscribed for the Cultivator and like it very much.—H. J. J., San Bernardino.

Answer. Plymouth Rock eggs hatch well, very well in incubators.

You do not even mention what incubator you are using, so it is impossible to answer your second question. You had better follow closely the directions for operating the incubator. When the Government has the gopher virus we will publish the fact.

* * *

Controling Sex.—(Mrs. W. P. McC.) Editor Cultivator; I take the Cultivator and have been interested in your articles on poultry. I would like to give you my experience. In the spring of 1905. I mated a Buff Cochin cock ten months old, to ten Barred Ply-

Buff Plymouth Rocks

A few fine cockerels $2.00 to $4.00 each. Eggs, $2.00 for 15. Very choice Eastern stock.
F. W. Tutin, Riverside, Cal.

BLUE ANDALUSIANS

Exclusively the best general purpose fowl for the Pacific Coast, Eggs, $2 for 15; incubator lots at special prices. Cockerels for sale.

C. E. CHITTICK.
124 Avenue 34
Los Angeles, Cal.

Buff and Black Orpingtons
Silver Penciled and Columbian Wyandottes

Eggs for Hatching. Stock for sale.
Mrs. C. J. Jacobs, Box 356, Monrovia, Cal.
Mountain View Poultry Yards
Home Phone 148

Buff and Black Orpingtons
Buff and Brown Leghorns
Indian Runner Ducks—Bronze Turkeys
Eggs and Young Stock in Season
W. W. Bliss - Duarte, Cal.

SINGLE COMB WHITE LEGHORNS
Thorough-bred Stock. Eggs, $1.50 per 15

INDIAN RUNNER DUCKS
Eggs, 1.50 per 12,
Send for illustrated catalogue

John P. Boden, 638 Second Street, Watsonville, Cal.

Eggs Wanted for Hatching

Our big adobe incubator brings the best results. Send us your eggs and we will return the chickens. Young Chickens and Turkeys Wanted.

Bamboo Poultry Ranch - Glendale, Cal.
AIKEN & CO., PROPRIETORS

Poultry Ranches in California

Are more profitable than anywhere in America. Conditions are exceptionally favorable for breeding, and chickens and eggs always bring better prices. The finest poultry land in the state is near Los Angeles. For full particulars write or call.

Anna L. Pinkerton
Realty Trust Company, 129 So. Broadway,
Los Angeles, Cal.

EGGS

Barred Rocks, White and Brown Leghorns, $5.00 to $6.00 per 100, $1.25 to $1.50 per 15. White Wyandottes, $7.00 to $8 00 per 100, $1.25 to $2.00 per 15. Reds, Orpingtons and White Rocks, $6 00 to $7.00 per 100, $1.25 to $1.50 per 15. Other kinds, prices on application. You can buy cheaper eggs than we sell, but are they good? Are they guaranteed? Ours are.

Sole Agents Standard Cyphers Incubators **Kloninger Bros., 838 S. Main St., Los Angeles**

EGG FOOD A.C.W. IT FILLS THE BILL

To Build a House

The contractor has to have brick, lumber, hardware, etc; in fact all material to build a perfect house. In order for a hen to "make eggs" she has to have the materials, also, that eggs are made of.

A. C. W. Egg Food Contains All These Elements in Exact Proportions

Analysis of the Egg:

Water	650 grains
Albuminoids	80 "
Oil, Fat, Etc.	135 "
Mineral Matter	9 "
Sugar Coloring Matter	26 "
	900 grains

The remaining 100 grains of the 1000 are used in the shell, which contains about 50 grains of pure uncombined lime, the remainder being carbonic acid, water of chrystallization, etc.

Modern science is wonderful and helpful.

A. C. W. is a new food, some dealers do not keep it **yet.** If yours does not, write to us. We will supply you. All sacks sealed and guaranteed.

Agricultural Chemical Works **901-907 Macy Street Los Angeles, Cal.**
Phones: Sunset, Boyle 3; Home, 6063
Manufacturers of Egg Food, Chick Food, Bone, Grit, Charcoal, Etc., for Poultry

Poultry and Eggs Wanted

This sign you will see hanging outside of a merchant's store in nearly every town on the coast and it, in a measure, must convince you that there is money in the poultry business, and the

Chatham Incubators

will assist you in making money. Any responsible person can get a genuine **Chatham** and have SIX MONTHS TO PAY FOR IT—what is the use of you paying out money for an Incubator when you can make it pay over and over again for itself?

I can give you hundreds of testimonials from customers all over the Coast who purchased Chatham Incubators and Brooders last season on our **ON TIME PLAN,** and are thoroughly satisfied with them. The manufacturers fully guarantee every machine. Write me for our catalogue and some useful hints on poultry raising—it will be mailed to you free.

Geo. W. Foott, Box 2040, Portland, Ore.

mouth Rock hens one year old. In the month of May I set sixty eggs from those hens; 50 of them hatched four matured chicks failed to get out of the shell; eight eggs got broke in the nest and four appeared to be unfertile. All of the fifty chicks lived to be grown; every one of them was pullets, heavy bodies like the Cochin and Brown in color. They began to lay when six months old. I would like to know why there was no males among them?—Mrs. W. P. McC., Chino.

Answer. It is almost as difficult to know what sex will result from the mating of fowls as from any other animals.

Amongst my own fowls I have noticed that there is a larger proportion of females from hens just beginning to lay after a rest, and a larger proportion of males when mating a cockerel to old hens, but this might not be the case with your cross.

* * *

Cold Storage.—(Old Subscriber) Editor Cultivator: Can you give us a few hints in regard to placing eggs in cold storage? Can they be put in cold storage warehouses, say a single case at a time? It looks now as though eggs were going pretty low, in price and we do not care to give them away. Do you know any thing about the expense attached to storing them. By answering the above, you will confer a favor on.—J. B. K. E., Anaheim.

Answer. The Los Angeles Ice and Cold Storage Co., (4th and Central) will store eggs at 15 cents per case per month, or for fifty cents from now till next January, or if you have many cases they will make a very reasonable contract with you. You had better write to them.

* * *

WATER GLASS.—(J. M. B., San Jose, Cal.) Would you kindly tell me if dipping the eggs in the pure "water glass" will preserve them, without putting them in barrels and covering with the solution. Would you also tell me how this water-glass is made?

Answer: Dipping the eggs in the pure water glass will not preserve them, as the water-glass will run off and the air will get in. The water-glass is cilicate of soda. It is made at some chemical manufactory in the East.

BLUE ANDALUSIAN

Where can be found more beautiful or ornamental fowl than the above named? They not only have these qualities as a recommendation, but they possess the great merit of being prodigious egg producers, the characteristic of all Mediterranean breeds. Till quite recently they have not had the support from fanciers that they deserve, but now that their good qualities are becoming better known they are finding more supporters every day.

Messrs. Abbott Brothers, Norfolk, England, say, "We keep them entirely for egg production and find them such wonderful egg producers of both size and quality that we discarded the common barnyard fowl kept before. We took six pullets hatched in April and mated them with a cockerel on the 1st of August and kept them together until July 31st following, and the result of this experience was an average per hen of 234 1-2, or a total of 1,407 eggs."

I think it would be difficult to find a breed of fowl to beat the Andalusian. Of course there are Andalusians and Andalusians. The circumstances and conditions under which they are kept, the feeding and many other things affect their laying to a great extent.

Beginners starting this, or any other breed, should be careful in their inquiries as to the laying qualities of the stock from whence they get their birds, also when the purchase of eggs for setting is contemplated, the wisest plan is to apply to a breeder whose reputation is really the good-will of the business. They should be prepared to pay a good price. The best pays in the end.

The farmers would do well to invest in a few Andalusians of a good laying strain to improve their stock. The cost would be repaid in a short time.

L. C. Verry, London, England, says: "There are two ways which Andalusians can be successfully mated, but that which he recommendes as the most certain, and likely to produce the greatest percentage of blue chickens, and from which both sexes can be bred from the same pen, is to select light blue hens, with a fair amount of lacing, good in head points, mate these with a cockerel profusely furnished with rich glossy hackles and which well cover the wing bow; the breast and under-fluff being blue. The produce from these will be as nearly up to the mark as possible. It is not always that a pen like that can be procured without putting one's hand down well into one's pocket. The percentage of blue chicks really depends on the strain of birds you breed, and careful breeding is no longer a theory, but an accomplished fact with expert fanciers in spite of what some people may think to the contrary. From the best mated pens there will be off-colored chicks, but they are just as good layers. The chicks are very hardy and are particularly free from diseases. They feather very quickly and generally lay when from four to five months old."

MRS. T. R. GRIFFITH.

LAYING QUALITIES OF HENS

Editor Cultivator—I am preparing to stock with a few chickens. Will you kindly tell me something of the relative egg-laying and "eating" qualities of the Silver Laced Wyandottes, Barred Plymouth Rocks, White Plymouth Rocks and Buff Cochins. J. W. W. Bakersfield.

The laying qualities of Wyandottes and Plymouth Rocks are extra good. With proper care and management these hens will lay from 150 to 200 eggs per year and individual cases more than that. There is practically no difference in the laying qualities of Silver Wyandottes, or Barred, Buff or White Plymouth Rocks. Black Langshans also are good layers and on account of their heavy feathering, are supposed to be extra good winter layers. Buff Cochins will not lay as many eggs as the above-mentioned breeds, they have a decided inclination to persistent sitting. The eating qualities of Wyandottes, Plymouth

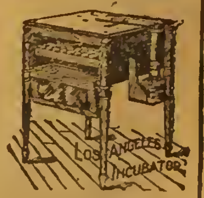
Standard Bred S. C. White Leghorns

EXTRA LARGE BIRDS AND HEAVY LAYERS. Eggs, $2 per 15; $8 per 100; $60 per 1000 from January until July only.

CAPTAIN MITCHELL SANTA BARBARA, CAL.

Author of "A Practical Poultry Plant for Southern California," $1.25 cloth binding, on sale by Calif. Cultivator

Dean's Pacific is an Incubator built on scientific plans and has all the latest improvements. Every machine guaranteed. "Facts From Experience" and Catalog for the asking. Address Dean's Place, 2509 Central Avenue, Los Angeles.



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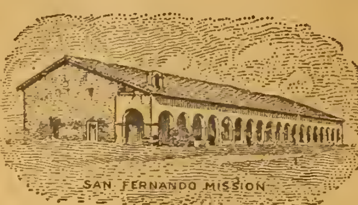

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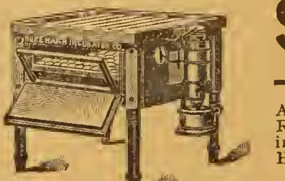
Largest Breeder of WHITE WYANDOTTES on the Pacific Coast

Buff Cochin Bantams and One-Quarter Wild Mammoth Bronze Turkeys. Winnings at la e Poultry Breeders Society Show on my stock: 27 ribbons, 3 special ribbons, silver cup and Queen incubator.

Mrs. C. D. Hubbard, Box 282, San Fernando, Cal.



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Winner New York, 1904, score 97½. Used as a model in the American Standard of Perfection.

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All specials and medals—best hen, best head, pure color.

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FIRST PRIZE PULLET at Madison Square Garden, New York, 1905, as well as one of the best cockerels in the U. S.; were sired by our famous Rob Roy Jr.

Our patrons report grand success with pullets from our stock; 26 eggs per month, 56 eggs in 64 days, 18 eggs in 19 days; eggs that weigh 2½ to 3 ounces.

229 eggs already this season.

Improve your flock with one of our large, beautiful White Cockerels.

Birds and eggs for setting. Price list mailed on application.

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Fine large stock, heavy layers, best of broilers. Eggs, $1.50 per setting.
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BUFF LEGHORNS BARRED ROCKS
Prize-winners at Chicago, St. Louis, San Francisco and majority of prizes at Portland on Buffs. Choice Cockerels and Pullets for sale.

White Rocks Exclusively
Limited number of young birds. Eggs from prize winning, producing strain. $2 per 15 or $5 for special mating. Write for circular.
Mrs. Rhoda E Durfee, 1110 W. 1st St., Santa Ana, Cal.

Banning Poultry Yards
White Leghorn and Barred Rock eggs for sale, $1.00 for 15, $4.00 per 100. Fertility guaranteed. Correspondence solicited.
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THOROUGHBRED YOUNG CHICKS
White Leghorns, 10c.
White Ply. Rocks, 12½c.
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Barred Plymouth Rocks
Standard Bred, Hawkin's Strain, $1.00 to $1.50 per setting of 14. Young chicks after March 1st
Mrs. Albert Miller,
1913 Ricardo St. Sta. A, Los Angeles, Cal.

Blue Andalusians
At Los Angeles, 1906, our strain in a class of 68 Andalusians with 16 birds won more firsts than all our competitors combined. Eggs, $2.50 and $3.00 per 14.
Blue Ridge Poultry Yards, 128 Avenue 32, Los Angeles

Eggs for Hatching from Imported Fowls
Barred Plymouth Rocks, Buff Orpingtons and White Leghorns imported from Government College, Canada, none better in the State, also White Plymouth Rocks, at $1.00 and $2.00 per setting or $5.00 per 100. Also offer for a small price 3 Imported Barred Rock Cockerels (pullet mating) at $5.00 each. Orders filled promptly.
Thos S. Armstrong, Calla Poultry Ranch, Anaheim, Cal.

100 White Leghorn Hens and Pullets For Sale
A Bargain. High-grade birds, large, healthy and vigorous, all laying and will pay you $1 per day profit right now. Only offered because we need the room. $1.25 each in any quantity. Write at once. **Eggs for Hatching.** High quality, low prices. First prize winners at Los Angeles and San Diego.
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Perfect in construction and action. Hatches every fertile egg. Write for catalog to-day.
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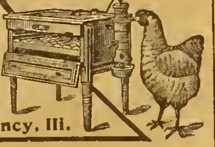

BARRED ROCKS
EXCLUSIVELY
Send for 16-page 1905 Catalogue
H. R. CAMPBELL
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Mountain View Poultry Ranch
S. C. White Leghorns—Heavy layers. Eggs, $1.50 per 15, $5.00 per 100.
Indian Runner Ducks—Males for sale. Eggs, $1.00 per 13, $3.00 per 30, $5.00 per 100.
Mrs. J. L. Updyke - Fullerton, Cal.
Successor to Jacob Kreger

Rose Comb White Leghorns
High Grade Buff Orpingtons
Varian's Poultry Yards
P. O. Box 666. Home Telephone 1886
895 N. Catalina Ave., PASADENA, CAL.

White and Silver-Laced Wyandottes
White Plymouth Rocks
White Leghorns and Black Minorcas
Plymouth Rock and Wyandotte eggs, $2.00 per setting, $8.00 per hundred.
Leghorn and Minorca eggs, $1.50 per setting. $6.00 per 100.
I have been breeding thoroughbred poultry for over 20 years and have as fine stock of these varieties as there is on the Pacific Coast.
I also hatch and can supply little chicks from a dozen to a thousand from the above varieties delivered anywhere within 72 hours of San Jose. Prices on application.
J. S. Smith, Box 526, San Jose, Cal.
YARDS—CORNER MOORE AND CHAPMAN STS.

Rocks and Buff Cochins are in the front rank. The Wyandottes are a little plumper than Plymouth Rocks when in the broiler stage, though they are a pound lighter when fully matured. Buff Cochins outweigh either by two or three pounds when full grown.

BROODY HENS

What disposition to make of broody hens is something of a problem. If your crop of youngsters is short, by all means put the hens to work to overcome the shortage. I have found the first three months of the year always gave me the best result, but have done fairly well with chicks hatched every month in the year except July and August, and my own experience has been duplicated by scores of breeders.

If you have hens that want to sit and you don't care to indulge them in their desires, don't resort to harsh measures to break them up. Some recommend driving a stake and tying the hen to it for several days. Others tell you to put them in a wash tub which contains about one inch of water and by forcing them to stand up several days they say the desire to sit will vanish. I have read of numerous other plans just as foolish and cruel. My plan is to take them out of their accustomed place and put them on a nice green lawn or anywhere conditions are entirely different from what they have been accustomed to. They are fed very sparingly, which forces them to put in most of their time rustling for subsistence. This plan rarely fails to bring the desired results and in three of four days they are returned to their old homes and are ready for business—egg producing. Young hens are more easily cured of the desire to sit than old ones. Occasionally an old hen persists in sitting—she will sit anywhere. In such cases use a little patience and remove her from place to place until she gives up as a bad job.—M. Cornett.

SHIPPING EGGS FOR HATCHING.

In shipping eggs for hatching too much care can not be taken in packing. An ordinary basket with plenty of excelsior in the bottom and the sides well cushioned makes an excellent receptacle. Into this the eggs, carefully wrapped, should be packed, and over them plenty of padding placed. Cheese cloth or cotton tacked over the top forms a satisfactory covering. Such a package, conspicuously labeled "Eggs for Hatching," can be shipped any distance and will reach its destination in good condition. Upon receipt of the package the eggs should not be removed until the hen or incubator is ready to receive them, but the eggs should be turned over daily.

LINES TO THE HEN

"Ed" Blair of Cadmus, Kan., known locally as "the melodious poet of the Osage," has written the following lines to the hen:

Cackle, cackle, Plymouth Rocks,
Ye can have the wagon box,
'N' the smoke house, 'n' the barn,
Take 'm—we don't care a darn.

Cackle here and cackle there,
Lay your eggs just anywhere.
Every time you lay an egg,
Down the mortgage goes a peg.

Cackle, cackle, all the day,
Who kin find a better way
For to get ahead again
Than to cultivate the hen?

HATCH NOW YOUNGKEN'S 200 EEG STRAIN WHITE ROCKS
Eggs, $1.50 and $2 per 15, $3.00 and $3.50 per 30, $10 per 100.
Stock, Males, $5 and up. Females, $1.50 and up.
C. D. YOUNGKEN 5520 Hill Crest Drive, Los Angeles Tel. East 767

$8.00 COCHINS $8.00
A TRIO
BUFF, BLACK or WHITE
Send for circular, giving undefeated show records. These are the best winter layers, finest table fowls, and by far the most healthy and hardy. Eggs, $2.00 per setting of 15. Prize winners, Eggs, $3
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West Coast Chick Feed
Is the Best. Manufactured by West Coast Stock Food Co., 818 San Fernando St, [through to Alameda] Los Angeles

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The Jubilee Incubator Co. has just issued a magnificent catalogue—80 big pages—describing the Jubilee Incubators and Brooders—the business machines of the world. YOU NEED IT.
The Jubilee Line of Poultrymen's Goods sold direct to you at wholesale rates. The Jubilee Book tells all. Send for it. Mailed FREE.
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A. E. Bourke, Pres. Phone Black 1211

PETALUMA, CAL., JAN. 1, 1906.
TO WHOM IT MAY CONCERN;

As the chicken raising season is at hand, we beg leave to call your attention to a few of our specialties.
Do you need an Incubator? Our machines are fully guaranteed and have proven themselves unsurpassed wherever used.
Do you need Brooders? We manufacture just what you want; fully guaranteed, made of the finest material and of the best possible workmanship, and, above all, a practical machine which saves the purchaser money, time and labor.
Do you need Poultry Supplies of any kind? We manufacture a line of Supplies the use of which makes Poultry Raising not only profitable, but a pleasure. Among our specialties are:
Our Water Fountains; our Self Feeder for Chicks, our Feed Troughs, large and small; our Lamp Fillers.
Our convenient Must Hatch Nest Boxes; our safe and sure Must Hatch Insecticide our sanitery Must Hatch Disinfectant, our sure death Must Hatch Lice Exterminator, our Poultry Compound, a fine Spring and Fall Tonic.
In connection with the above list, all of our own manufacture, we can also furnish the following, which are indispensable to the Poultrymen:
The No. 128 Clover Cutter, the Enterprise Bone Mill, the Ohio Feed Cutter, the Banner Root Cutter, the Enterprise Feed Chopper, the Ideal Duplex Feed Mill, and the Farmer's Boiler.
Do you wish to make your own Incubator or Brooder? We can furnish you all the necessary parts for making an Incubator or Brooder, also plans for the best and most practical Poultry Houses.
Did you ever purchase Just Hatched Chicks? We have a Hatchery of 50,000 chicks per month capacity in operation the year round and have, for the past few years. been successfully shipping, in our specially constructed carriers, just hatched Chicks, to distances as great as 2,000 miles. If you need them, book your order early, as our future delivery list is rapidly filling up.
We can also supply White Leghorn hatching egg in quantities desired. If you have not already received our catalogue, write for Catalogue B, and you will find therein a more detailed description with prices, etc., of the above.
Hoping to hear from you in the near future, we are,
Yours Very Respectfully,
MUST HATCH INCUBATOR CO.

Veterinary

BY DR. W. J. OLIVER,
318 East Second St., Los Angeles.

To the end that this department may be made as valuable to the subscribers as possible, we ask observance of the following: Be sure to state in full the history of the case, location of the disease and the conditions under which the animal has been kept just before and since the disease appeared. Give your name and address, which will not appear in the paper if you so request. No charge whatever is made for such questions as are answered through the colums of the Cultivator, but when an immediate mail answer is wished Dr. Oliver asks an additional fee of $1.00 and will give immediate attention and reply by mail. In such case write Dr. W. J. Oliver, 318 E. Second St., Los Angeles, Cal.

Questions should be in by Monday to be answered in the following Friday's paper.

BARREN COW

Dear Sir:—I have a valuable two-year-old heifer which has been bred a number of times, but fails to get with calf. I have tried different bulls but with no success. What can I do to remedy the difficulty? Please answer through the coulmns of the Cultivator. W. Riverside.

There is occlusion of the canal leading to the uterus the os. This can be remedied sometimes by smearing the hand with oil, inserting it into the vagina cone shaped. You may be able to dilate the parts with the finger, making an operation into the uterus. I often found it necessary to use a sound, a steel instrument made for the purpose before I could affect an opening.

This should be done when the cow comes into heat. Then breed her the same day.

ELEPHANTITIS.

Editor Cultivator: I have a horse that has a swelled hind leg from the ankle up to the body; keeps gathering in abcesses, and breaking out, has now extended to front leg; the legs are left ones; called a local veterinary up, and he said it was elephant leg or elephantitis; he is fed on alfalfa hay, and has not been worked for four months on account of leg; he is in good health in every other way, and is a very willing and gentle horse; he is about 10 years old.—J. A. R., Fresno.

Your veterinary made a correct diagnosis of the case. This is incurable when it gets to the stage you describe. You could give the horse a physic and treat the sores with Copper's water and the horse could do slow work.

BARRED BEAUTIES.

One of the most enthusiastic admirers of the Barred Rock in this State is H. R. Campbell of Petaluma. He is also a conscientious breeder of them and he understands the science so that he is producing some which are of finest feather and such indefatigable layers that they prove profit winners.

At a recent San Francisco show the judging was by Judge Holders, one of the best Barred Rock specialists in the country and under his judging Mr. Campbell won: First cockerel, first and fourth hen, and second cock and fifth pullet, and every bird his own breeding.

Mr. Campbell follows the double mating plan entirely and shows results for his careful work.

At Alameda his winnings were much the same as at San Francisco. His prices for some of his choicest matings of prize winners seem high at first, for they are $5 per sitting. But when we understand what the care required to produce such fine birds he may appreciate the fact that the price is not simply for the fancy, but compensation for much hard work. Other pens of fine birds, almost perfect in markings and strong of constitution, furnish eggs which may be had at $2.50 per sitting.

J. H. Gulich is advertising native stock grafted walnut trees in the Cultivator.

VALUABLE RAINFALL CHART.

Southern Californians may get a world of information from a "Comparative Rainfall Chart for Southern California,' which is issued by the Security Bank of Los Angeles. This chart gives the figures and in a colored diagram the rainfall at Los Angeles for every month from July 1881; also the average for each year since that time, and the seasonal averages for 26 years of Los Angeles, San Bernardino, Riverside, Orange and San Diego counties. This chart, which is just issued. carries these figures up to this time, or rather, to Feb. 1st, 1906. It is most valuable because of the fact that the diagram gives, at a glance, a comparison of the various years.

Following the rainfall chart is another diagram which shows the increase of deposits in the Security Savings Bank since January 1st, 1898. In a word the increase has been from $1,194,283.00 to $13,503,029.25. This leads us to say just a word regarding this magnificient institution. It is the largest savings institution in California, outside of San Francisco and Oakland. It was organized in 1889, and we believe it is safe to say that its remarkable growth is due to the careful attention observed in the managing of its large business. It has a paid up capital of $330,000.00. Surplus and profits of over $325,000.00, and total resources of over $14,500,000.00. While it is a savings bank and restrictive in its loaning, yet, it has a large number of personal checking accounts, but of course, its principal feature is its savings and real estate loan department.

A committee of ten directors meets weekly to investigate and approve all loans. The bank employs an expert appraiser and no more than forty per cent. of a conservative value of the real estate is loaned, thus insuring what is most important—the safe investment of the depositors' funds.

The Security Savings Bank, desirous of extending its facilities, and to accomodate those living at a distance, has adopted a system of banking by mail, which solves the problem of safety and profit, regardless of where one resides. The mails have proven eminently safe, and under this simple and practical system you can have the benefit of the security and profits of an account with one of the strongest banks in the Southwest.

If subscribers of the Cultivator will write the bank and request a copy of the above mentioned rain chart, it will be sent free of charge, and we do not doubt, if requested, a beautiful illustrated little pamphlet with further information regarding the advantages of banking by mail and at the same time having the money where absolute security is insured, as well as a fair rate of interest will also be sent.

BEE KEEPERS SUPPLIES

When in Fresno recently it was the pleasure of the writer to look over the extensive mills of the Madary Supply Co. These mills are fitted for turning out almost everything in the line of wood work, but are specially supplied with all appliances for the needs in the apiary. As extensive as these mills are at Fresno, the principal distributing point is in a supply house branch at 737 Aliso St., Los Angeles. This house is in charge of Mr. G. M. Clayton, who has the entire management. It has easily the largest and most complete stock of bee keeper's supplies to be found west of the Rocky Mountains. Mr. Clayton will be pleased to send a catalog of everything which pertains to bee culture to those who are interested and inquire for it.

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Are Past Masters in the Art of Manufacturing
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Tents, Covers,
Irrigating Hose
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The great Chino Ranch is located in one of the most fruitful valleys in the world, 35 miles east of Los Angeles, adjoining the progressive cities of Pomona and Ontario.

It is one of the few agricultural districts in Southern California where small capital can accomplish **big results**—where men of integrity and industry can wrest independence from a responsive soil, where a never-failing water supply, proper climatic conditions, Agricultural Station advantages, adequate railroad facilities, dependable markets, modern rural improvements and ideal social conditions, all unite in making Southern California ranch life just what it should be **—a Supreme Success.**

Alfalfa, onion raising, sugar beets, walnuts ard fruit culture are bringing big profits to Chino ranchers.

The ranch may be visited any day under our auspices. Trains leave daily from Los Angeles (via the Southern Pacific) at 8:05 a. m. and 5:25 p. m.

An unlimited Certificate of Title may be secured from the Consolidated Abstract and Title Guarantee Co. of San Bernardino, Cal., by all purchasers of Chino lands.

Chino Land & Water Co.
Main Office, Chino, Cal., or 720 Trust Bldg, Los Angeles
D. O. Stewart & Co.
138 South Broadway Los Angeles, Cal.

"Dependable Furniture at a Fair Price"
A Superior Display of
Oriental Rugs

We wish to announce the arrival of our large shipment of high-grade Oriental rugs, including some of the finest specimens of the genuine antiques ever brought to this country. These rugs were all

Imported Direct from the Orient

and are remarkable for the richness of their colorings and their beautiful designs. This display includes rugs from the deft fingers of some of the most famous makers and some of them represent almost a lifelong work. They are genuine antiques and were collected from all parts of the Orient. You will find in this remarkable collection **Kazaks, Shirvans, Serabends, Feraghans, Daghestans, Khorassans, Bokharas, Afghans, Kurdistans, Etc.**

We have rugs ranging in size from the smaller mats to the large carpet size rugs 12 ft. 9 in. by 17 ft.

We are sure you will be interested in this display and we ask you to see it at your earliest convenience.

NILES PEASE FURNITURE CO.
439-441-443 SO. SPRING ST., LOS ANGELES, CAL.

When writing to Advertisers Please mention Cultivator

Queries and Replies

CORN WORMS.

Editor Cultivator: What can be done to head off the worm eating into the ear of sweet corn when green? Would flowers of sulphur help if sprinkled on the young ear?—C. A. McD.,—Beaumont.

This question was sent to the University of California and answered by Prof. W. T. Clarke, as follows:

The question enclosed in reference to the controling of the corn worm is as yet not fully solved. We can say positively however, that the use of flowers of sulphur sprinkled on the young ears does not in any wise control or destroy the worm. Probably the most satisfactory material to use for this purpose is Paris green and hydrated lime in the proportion of one of the Paris green to three of the lime; this to be sprinkled upon the ears dry. A certain amount of relief can be obtained by this method of work. Unless late corn is desired you will find it desirable to plant the corn very early so as to avoid the later heavy broods of the moth laying eggs from which spring the worms. It is also advisable to use varieties of corn that are set irregularly upon the ear. The so-called Country Gentleman and the Zigzag evergreen varieties are very satisfactory in this connection; the idea being that the majority of the worms enter the ear at the outer end. If the rows of grain are regular on the cob then the worms will follow down one of these rows and badly damage the ear. If, however, the grains are irregularly placed then the worms confine their attention usually to the outer end of the ear and the damage is concentrated in this situation. I wish I could give you rather more definite information in this matter, but the insect in question is at present being investigated and studied and we as yet consider that the work is in an experimental stage.

JUST ANTS

Editor Cultivator.—Will you please tell me through the columns of your paper how to get rid of little red ants in a hot bed. also in the house. The ants infest the hot bed and flower beds to the extent that they carry off nearly all seeds planted. I've tried everything I ever heard of, but so far the ants are ahead. They get more numerous every year. Mrs. G. W. H., Reedley.

One ounce of arsenic to one quart of water; boil until reduced to one pint; add one-half pound sugar, mixing well. Put this in a saucer or similar receptacle. This preparation is deadly poisonous to all animal life and care should be exercised in its use.

Punch holes about a foot deep with a stick at three or four points near the center of the nest; pour into each about an ounce of the bisulphide of carbon and close the openings with the food. The vapor will get into and follow the galleries and kill the ants. A second treatment will rarely be necessary.

A weak solution of carbolic acid is another easy and inexpensive liquid for pouring in the nests.

GARDEN SNAILS

Editor Cultivator.—Will you please tell me if there is any way to get rid of the snails. They are very numerous in my garden, and eat the vegetables as soon as they appear above ground. Could have a nice garden only for them. Kindly answer in your next paper and oblige a subscriber. M. E. E., Santa Rosa.

The writer has tried every remedy brought to his attention and found none sufficiently effective except hunting them out and killing them. Our best practical gardeners seldom resort to any other method.

WALNUTS

M. H. S. (Long Beach?) We think the Placentia Perfection will do as well as any with you, but we would not recommend planting walnuts on the mesa you suggest, though you may have some measure of success.

LICE ON CATTLE

Editor Cultivator.—What is the most effective and most simple method of getting rid of lice on cattle, especially little calves. Both the black and red lice. Subscriber, Fresno.

A quarter pound of tobacco dissolved in a gallon of water by heating, and well rubbed into the hair will drive away lice, so will coal oil, but it is liable to take out the hair.

NATIVE WALNUTS

Editor Cultivator.—Can you refer me to anyone who could furnish me or inform me where I could get some Black Walnuts from a prolific, thrifty tree. California Native preferred. I want them to grow stock for grafting. G. E. B. Santa Ana.

You had best collect your nuts in the hills about Santa Ana. There are plenty in the Santiago section. It will doubtless make but little difference what kind of a tree they are from, though there is no use "flying in the face of Providence," so we would choose them from the best tree to be found. Nearly all native walnut trees in the Southern part of the State are small, though there is but one species.

TEMPERATURE OF CREAM

Editor Cultivator.—Please tell me what the temperature of cream should be at the time of churning to insure best results. Mrs. F., Nordhoff.

Fifty to fifty-four degress we have used for years as a churning temperature. I find some creamery churning as low as forty-five degrees and others at sixty, so it really is not a matter of as much moment as having the proper degree of acidity to obtain uniform results.

GOPHER POISON.

Editor Cultivator: I am a subscriber to the Cultivator and I would ask if you would please give me a good remedy for getting rid of gophers and squirrels in the vineyard and orchard?—J. R. M., El Cajon.

Read the Cultivator of last week. J. B. Neff gave a poison remedy which is what you are asking for.

CRIMSON WINTER RHUBARB

To Mrs. M. E. G., and others we will say that we believe the Crimson Winter Rhubarb is all that is claimed for it. We know of growers who have made immense profits from the marketing of the stalks.

LOSS OF MILK

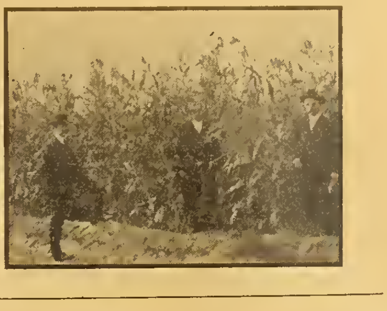
Editor Cultivator:—We have a good gentle cow that was giving about two gallons of milk daily. On the evening of January 31st she gave her usual amount of milk and on milking her the next morning she was completely dry with the exception of two or three weak squirts not amounting to over half a teacupful .She kept that up for three days, but is now coming up very slowly. Her bag did not show any signs that she had sucked herself and no one could have milked her during the following days, which we had thought might have been done during the firts night. The cow did not appear to have had any severe fright during the night as she was as calm and gentle as usual. There is six other cows kept in the same field with her. W. Watsonville.

Possibly some of the other cows are milking her, as she is very gentle. Test this by covering her udder with a gunny sack tied on with a surcingle and steadied with a back-strap. If this proves not to be the case then the next thing to be looked to is that she may have fever. Try her temperature by inserting a thermometer into the rectum. This can be done with a gentle cow by greasing the bulb and inserting it so gently that the cow does not object. The normal temperature of a cow is 98-99 degrees. If she shows fever and you are sure she has cleaned alright and has not abort give her quinine in ten grain doses twice a day and every other day give her a pound of glauber or epsom salts with two tablespoonfuls of ginger. The cow may be a cow that is accustomed to go dry at this time and if that is so she will dry up in spite of feed.

CALIFORNIA SUGAR CANE.

Those who think that good growth in sugar cane is confined to the land where dwells the "sabled-hued son of the sunny South" may have such ideas upset by a careful look at the accompanying illustration.

Here is shown a field sugar cane, growing near Corcoran in Kings county, only sixty days old and more than nine feet high. Such growths are not rare by any means for many of the farmers in that rich section have had equal or better results in growing sugar cane with which to feed their stock. It is highly probable that this class of fodder will be extensively used in the future for it seems wonderfully adapted to the soil and climatic conditions around Corcoran..



NUT GROWING IN OREGON.

Mr. J. B. Pilkington in the biennial report of the Oregon State Board of Horticulture says that nut culture will become a permanent industry in that state.

Especial attention is given to the culture of filberts and English walnuts. In the former the shrubs at 9 years old bore 25 pounds each of filberts. In walnuts it is advised to grow only grafted, late blooming French varieties. Those blooming early are nipped by frost and produce no nuts.

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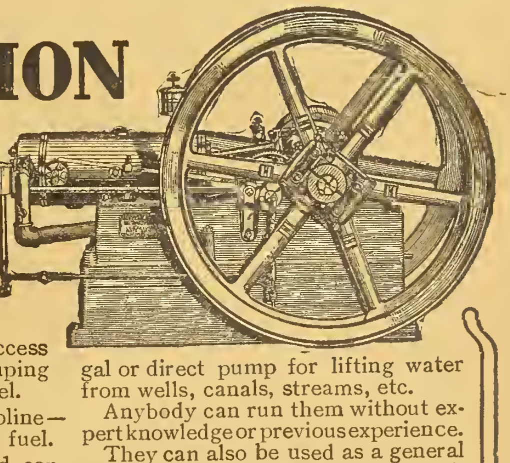

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WRITE FOR PARTICULARS

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Household Department

ABRAHAM LINCOLN.

This man whose homely face you look upon
Was one of nature's masterful great men;
Born with strong arms, that unfought battles won,
Direct of speech and cunning with the pen.

Chosen for large designs he had the art
Of winning with his humor, and he went
Straight to his mark, which was the human heart;
Wise, too, for what he could not break, he bent.

Upon his back a more than Atlas load,
The burden of the Commonwealth, was laid;
He stooped, and rose up to it, though the road
Shot suddenly downward, not a whit dismayed.

Hold, warriors, councilors, kings!—all now give place
To this dear benefactor of the race.
—R. H. Stoddard.

The Reversion of Pauline.

It was sunny where we sat at Sutro Heights, between the white statutes of Prometheus and Femme au Serpent. At our left, stretched a smooth, red road.

"The road of love, and it leads to Paradise," I remarked.

Pauline was silent. Her dreamy eyes gazed beyond the little waves lagging in toward shore, out to the bank of fog which circled the waters as if to shut us two, there in the sunshine, away from the whole world. My glance lingered on Pauline's rippling brown hair, on her straight little nose, on her mouth; and I gave one long sigh of content.

"Pauline," I said, "will you marry me?"

"No," she answered.

Her tone was caressing, but it held uncompromising firmness. The fog was coming closer in.

"Why?'

Pauline turned her gray eyes from the ocean to me.

"One thing thou lackest," she quoted softly. "Go sell what thou hast and give to the poor.

I stared blankly at her. Was this child of luxury, this butterfly of fashion turning preacher.

"I don't say it's original, Elbert. For generations back there's been, every now and then, some one of our family who has believed and practiced it. I suppose the mantle of these peculiar ancestors has fallen on me, for it has been a life principle with me."

"Maybe I'm dense, but I confess I don't see—"

"I have more money than I know what to do with. So have you. It is absurd for us to marry, and put all our money together. It isn't right. You must choose some poor girl, and I a penniless man."

"Nonsense!"

"I really mean it.'

I reasoned with her for an hour and at the end of the time I left her looking at the ocean, her eyes wet, but her chin determined. Her chauffeur looked at me inquiringly as I strode past her auto car which had brought us both. I jammed my hat down viciously and started along the red road but it no longer led to Paradise. It was no "road o' love," and there was no Paradise anywhere.

"And the young man went away sorrowful, for he had great possessions."

It's amazing what a good night's sleep will do for a man. Next morning I had interview with my lawyer. It was tedious and somewhat embarrassing, as I had to explain some things I should have preferred to keep to myself. It was over at last and I sought Pauline.

I found her in the rose garden writing rapidly. When she saw me she sprang up, scattering her papers on the grass. She smiled at me tearfully.

"I discovered that I couldn't live without you," I said taking her into my arms. "I could have given away a dozen fortunes rather than lose you."

I felt her start.

"Given away, Elbert," she repeated. "You haven't given away—"

"Every cent," I cried gaily, leading her to a seat. "Just got the business finished. I'm your penniless man; now when will you marry me?

She stared at me, her eyes round and amazed. Then she laughed nervously.

"I have. too," she gasped.

"Have what. darling?" I querried.

"Given everything away. I was just writing to you to tell you that I cared more for you than for my wretched money: and it's all gone, gone, gone."

"Never mind, little girl. We have each proven our love. Now we will start in and live as our grandparents did. I will buy a ranch—"

"My grandparents didn't and you haven't any money, Elbert."

"Oh, that's so. Well, I will go and work for a rancher, then, and you can help the rancher's wife. You can make butter, and feed the hens, and—and fatten the pigs, can't you?"

She held up her little white hands and I covered them with kisses. Then she put them, one on each side of my face, and looked steadily into my eyes.

"Elbert, I will try if the rancher's wife will have patience with me."

"To whom did you give your fortune?" I asked, after a minute.

"To the church for an orphanage." Her lips were quivering again, so I said hastily:

"Well, sweetheart, go put on your plainest gown, as befits a poor man's bride, and we will go at once to the parsonage."

I laughed when she came back. Her "plainest gown" was simple and white but probably cost as much as I could earn on the ranch in a year.

"The minister lent me the money for the license, and has promised to wait until I get my first month's wages for that and his fee," I explained, as we walked along.

Pauline's face flushed and she looked up piteously.

"Didn't you save out enough for the ring—my wedding ring?" she whispered.

"Made a clean sweep of everything." I answered cheerfully, "except my clothes. I didn't think my —er—beneficiary would care for those."

She gave a patient sign.

"You will get me a ring as soon as you can, won't you, Elbert? I shan't feel married without a wedding ring."

"Sure, little girl," I answered huskily, as we reached the parsonage.

When my wife and I emerged from the minister's gate, I looked at her inquiringly.

"Well," I said, "probably we had better start at once for the country."

My small wife raised her hand with a charming assumption of dignity.

"Indeed, we shall not. We will go home until such time as we choose to go. The church can wait till we are quite ready to depart."

That evening as we sat in the rose garden, we were joined by Mr. Layton Pauline's lawyer.

"May I inquire as to your plans for the future?" asked the lawyer.

"We are going to the country to find work," Pauline began bravely, "You see, Elbert did just what I did—gave his money away. He came here to tell me, and I was writing to him. Wasn't it a funny coincidence?"

"Very," said the lawyer dryly.

My wife folded and unfolded her handkerchief. The lawyer gazed into space. Pauline sighed and Mr. Layton cleared his throat.

"And you expect to enjoy drudgery instead of luxury, do you?" he asked with the suspicion of a growl.

"It isn't a matter of liking," Pauline answered quietly. "Elbert did it because he cared a great deal for me; I did it because I loved Elbert, and I thought it was right. Of course, neither of us thought of the other's sacrificing; but it is done and we are going to make the best of it."

"I see. Would it disappoint you too much if your property were still yours?"

Pauline gasped.

"I thought you'd be sorry, so I made up the message from the church. As the church doesn't know what she missed she will be able to endure it.'

Pauline gave a joyful cry. "Oh, Elbert, I needn't wait a month for my wedding ring!"

"My wife buy her own wedding ring?" I asked fondly, wishing the lawyer were in Mexico for a moment.

"No; I'll have my property made over to you dear."

Mr. Layton turned to me. "May I inquire, sir, to whom you made over your property? Was yours given to charity, also?"

"I didn't think so at the time I did it," I responded smilingly. "It is in the name of Pauline Mowbray, spinster. I suppose her subsequent marriage—"

Pauline's face was close to mine.

"You precious, old, deceitful goose!" she said.—Ina N. Nelson.

OIL NEW SHOES.

When you buy a pair of heavy working shoes give them a good oiling before using. This will soften them, keep the water from the leather and make them last twice as long as if left to become dry, hard and wrinkled. Keep all places that begin to rip and wear through sewed and patched.

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Colonist tickets are honored in tourist sleeping cars which run via the Santa Fe to Los Angeles and San Francisco.

Cookery Recipes

DOUGHNUTS

To 1 cup sugar add 1 cup sour cream in which dissolve 1 teaspoon soda. Then add 1 cup sweet milk and flour to make a stiff dough.

* * *

BREAD CAKE

Into 1 cup light bread dough beat half cup butter, 1 cup sugar, half teaspoon cinnamon, and a little nutmeg. Let rise and then bake. If liked, add half cup chopped and seeded raisins, or currants.

Line a pie tin with a good crust and bake. When wanted, fill with the following mixture: Boil together 1 heaping tablespoon butter and 3 cups milk and then add 3 level tablespoons cornstarch dissolved in a little cold water or milk. Boil until it thickens, then remove from fire, stir in juice and grated rind of lemon and sugar to taste. Fill the pie crust and serve when cold.

* * *

LAYER CAKE

One cup sugar, one-fourth cup butter, three-fourths cup rich sweet milk 2 cups flour, two and one-half teaspoons baking powder. Flavor with vanilla and bake in three layers. Frosting: 1 cup sugar, 5 teaspoons milk, half cake sweet chocolate. Boil 6 or 7 minutes, then take from fire and add half teaspoon vanilla.

* * *

JOHNNYCAKE

One pint thick sour milk, half cup molasses, 1 teaspoon soda and 1 of salt, 2 cups Indian corn meal and 2 cups flour.

* * *

CREAM PIE

One cup sugar, half cup lard, 1 teaspoon salt, 2 teaspoons baking powder, 1 cup milk, two and a half cups flour, I teaspoon vanilla. Cream, sugar and lard, add milk, sift baking powder into the flour, mix all together and make in two round tins. Whip half pint of cream stiff, sweeten with 2 tablespoons confectioner's sugar, and add quarter of a teaspoon vanilla. Spread between cake.

* * *

COFFEE CAKE

Cream three-quarters cup butter and 1 cup sugar, add 1 cup molasses, 1 teaspoon cinnamon and half teaspoon each of cloves, nutmeg and salt. Dissolve 1 1-2 teaspoons soda in a cup of strong coffee and add to the mixture. Beat in 5 cups flour and 1 cup raisins. Butter should be stiff. Add more coffee, or put in less flour, if necessary.

The Family Doctor

THE WORM DOCTOR FAKE.

The following article from the "S Cal. Practitioner" will be of some interest to our readers, as not a few of them we presume have been misled by this same fakir. Wall Street and the Insurance offices are not the only places where the public are skinned, as this story shows.

"The specimens of worms here shown were supposed to have been passed by a patient of mine as the result of treatment, given by a well advertised "Worm Doctor" of this state.

This patient being in somewhat indifferent health, on the advice of a friend consulted this "Worm Doctor." After due examination the "Doctor" said he had worms, and promised to convince him by the production of them. If he could not, he would not charge him anything; but if he did, he would cure him for a certain sum, and guarantee to cure him any time if they returned in the next five years. This seemed a reasonable offer so he agreed to take the treatment.

The latter was conducted as follows: About noon-day a small glass of dark colored liquid was administered and he was told to return at 5 p. m. At that hour another glass of the liquid was given. A fountain syringe was then ostentatiously cleansed and filled with warm water in his presence, a glass of medicine was added thereto and the whole administered in the form of an enema. The amount introduced was so considerable that he had to get very hurriedly to the vessel. The enema acted freely and to his horror it seemed that five hundred worms were wriggling around in the vessel. Probably there were fifty. At all events, he secured half a dozen and these are here shown you. It requires no specialist to tell you that these are strange worms to be passed by a human being. I thought they were the larvae of the common blue-bottle fly, but to make certain I sent them to the Smithsonian Institution with a note, saying they were supposed to have been passed in the bowel movement of a patient.

The reply of Dr. Howard, Director of the Entomological Department will interest you:

Dear Dr. Davidson:

"Referring to your letter of the 3rd instant, addressed to Mr. Coquiliett and accompanying larvae, said to have been passed by a patient, I would reply as follows:

" Mr. Coquillett thinks that the larvae is Musca Domestica, and I have submitted it also to another expert assistant who says that it is undoubtedly a Musca. As you no doubt know, Musca Domestica (the common house fly,) will ovi-deposit abundantly in human excrement, and the evidence must be very careful before we can accept the statement made in your letter. There is no record of these larvae having been passed from the alimentary canal of a human being."

"Yours most truly.

L. O. HOWARD
Chief of Bureau.

The "worms" were probably introduced into the chamber when the enema was administered, and so adroitly has this been managed that for years this fakir has been producing "worms" from the gullible public all over California.

The "Doctor" informed this patient that these were "liver worms" and this was probably true, as they are as conveniently and freely produced in a piece of putrid liver as in any other medium.

* * *

Fresh Air.—Most people do not know the value of fresh air in their sleeping rooms. They put the children in bed, in small rooms, close all the windows and often the door and thus exclude all ventilation, and then wonder why their children have colds. Fresh air, not draughts, however, is as necessary to health as wholesome food. The children play out of doors all day, eat a hearty supper and go to bed. If they haven't fresh air, plenty of oxygen to produce digestion they take cold and serious complications, like as not, follow. Fresh air is Nataure's doctor, draughts its enemy, and the more big and little people can get of it the healthier they are.

A HINT TO THE WISE.

Never enter a home smoking or with tobacco in the mouth.

When a visitor always observe, even at personal inconvenience, the laws and customs of the home.

Rose water, five ounces, glycerine, one-half ounce, and lemon juice. one ounce, makes a whitening and healing lotion for chapped hands.

When walking keep the chest elevated and breathe deeply through the nose. A long walk may then be taken without exhausting effects.

Nuts should be eaten in the winter time. They are extremely rich and nutritous, vegetarians using them in place of meat and butter.

Avoid excessive use of all condiments, pepper, mustard, etc., as they will in time detroy the digestion.

Salt water acts as a tonic on the skin. Gently spatted on the face it will make the cuticle firm.

For a burn take the white of an egg. By excluding all air and forming a covering over the burn the pain is instantly relieved.

Tender feet should be bathed in alum water. If colored hosiery is worn have the soles and heels white. Tender feet are made more sensitive by the dyes used in stockings.

After exercising or bathing when the pores are open and the skin is in a glow, do not rush out into the open air or into sudden changes of temperature. Severe colds are taken unless good judgment is exercised at such times.

Manners are of more importance than laws, being the foundation stones of civilization.

Simplicity of manners shows the best breeding. Effusiveness and loudness are stumbling blocks of good manners.

When drinking from a cup the spoon is left in the saucer. It should never be left for a moment in the cup, being used only to stir and dissolve the sugar.

In most cases it is only necessary for a woman on being introduced to bow politely and repeat the name of the person presented.

At dinner or any meal if a guest upsets a glass or any accident occurs, he should offer a few words of apology which the hostess will similarly accept and endeavor to relieve his embarrassment by immediately detracting attention from the accident.

When stopping to talk for a moment with a woman on the street it is not necessary for a man to remove his hat and stand with head uncovered; the hat should be raised, slowly replaced and again lifted as the conversation is ended and he withdraws.

In pressing trousers turn wrong side out, spread flat, moisten the knees thoroughly, and press each leg carefully with a hot iron. Then turn, fold with long seams on the legs exactly together, cover with a damp towel and press each separately.

REGARDING PHYLLIS.

She hath a dimple in her chin,
All hedged about with kisses;
And Cupid lies intrenched therein,
A wee sharp shooting manikin
Who very seldom misses.
—Philadelphia Press.

"I took a long walk yesterday," said Boreman, as he took a seat by Busyman's desk.

"Take another, old man," suggested Busyman, "it'll do us both good"

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WRITE FOR CIRCULARS

OPIUM and Whiskey Habits cured at home without pain. Book of particulars sent FREE. B. M. Woolley, M.D., Atlanta, Ga., 103 N. Pryor St.

The Produce Markets

Los Angeles Markets.

Los Angeles, Feb. 22, 1906.

Butter has taken the expected decline and two pound rolls are now quoted 10 cents lower than last week's quotations, and a further slump is not probable.

Eggs remain as quoted, but the supply is scant, as poultrymen are holding their stocks for higher prices.

Potatoes of an inferior grade are in heavy supply, but choice grades are quickly taken at top quotations.

Abundant green feed has forced down the price of hay, most varieties suffering a decline of a dollar or more since last week.

Butter.

B. of T. Creamery, per roll	.60
Valley Creamery, fancy	.60
Valley Storage	.52½

Cheese.

Cal. 3-lb. hand	18½
Cal. Young America	17½
California Anchor	16½
Northern	16@17
Domestic Swiss	19@20
Imported do	26½@27

Eggs.

Eggs, Fresh Ranch	18

Poultry.

Fryers, 2 1-2 lbs.	18
Broilers, under 2 lbs., per lb	19@21
Young Roosters, per lb.	17
Hens, per lb.	15
Ducks, per lb.	14@15
Geese	14@15
Turkeys	19

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock:

Hogs, 200 lbs.	6
Prime Steers	4½
Cows	3¼
Calves, cwt	4.50
Sheep, ewes, per head	5.00
Lambs, per head	3.25
Wethers	5½

Potatoes.

Northern, per sack	1.65@1.75
Locals, per cwt	1.10@1.25
Sweets, white, per cwt	2.40@2.50
Sweets, yellow, cwt.	2.00

Vegetables.

Onions, Australian Brown, cwt.	1.75@2.00
Onions, yellow, cwt.	1.75
Garlic	7@10
Cabbage, per sack	40@60
Cauliflower, per doz.	40@60
Lettuce, per doz.	15@25
Bell Peppers	15
Chili Peppers, green	6½@8
Cucumbers, per doz.	60@2.50
Radishes, per doz.	10@15
Lima Beans	10@15
String Beans	15@17
Beets	40
Green Onions, doz. bunches	20@25
Carrots, doz. bunches	40
Turnips, doz. bunches	30@40
Celery, per doz.	35@40
Peas, per lb.	4@4½
Egg Plant	8@10
Tomatoes, local	75@1.00
Parsley, per. doz. bunches	60
Hubbard Squash, per lb.	1½

Citrus Fruits.

Lemons, standard	90@1.00
Lemons, choice	1.00@1.25
Lemons, fancy	2.00@2.25
Grapefruit	1.75@3.00
Navels	1.50@1.75

Fresh Fruits.

Apples, Bellefleur	1.35@1.50
Fall Pippins	1.00@1.10
Red Pearmain	1.00@1.25
Strawberries, per box	.25
Guavas, per basket	3½@4
Pears, Winter Nellis, per lb.	4½@5
Casaba Melons, large crates	2.25@2.50

Dried Fruit.

Apples, evaporated, ex cl., 9; ch, 8½.

Apricots, ex ch, 11; fy, 8½; ch, 7½.

Peaches, fy, 8½@10½; ch, 7½@8.

Santa Clara Prunes, 30-40, 8c, 40-50, 7; 50-60, 6c; 60-70, 5½.

Loose Muscatel Raisins, 2-crown 4½; 3-crown, 5; 4-crown, 6.

Beans, Dried.

Limas	5.00@5.50
Pinks, fancy	2.50@2.65
Lady Washington	3.00@3.10
Small White	3.50@3.75
Black Eyes	5.50@6.00

Nuts.

Walnuts, No. 1, soft shell	14½
Do, No. 2	8@10
Do. No. 1, hard shells	12
Do. No. 2, hard shells	10
Almonds, paper shells,	16@17
Almonds, soft shell	14
Peanuts, California	6@7½

Honey.

Honey, comb frames	14@15
White, strained, per lb.	6½@7
Light Amber	6
Amber	5
Beeswax	27

Hay.

Barley	12.00@14.50
Alfalfa, local	13.00@13.50
Alfalfa, Northern	11.00@12.50
Wheat	13.50@14.50
Tame Oat	14.50@16.00

Grain.

Selling prices of mill stuffs f. o. b. cars L. A., in quantity, are:

Rolled Barley	1.15
Bran	1.30
Feed Corn Meal	1.55
Shorts	1.45
Wheat, per cwt.	1.65@1.70
Cracked Corn	1.50
Oil Cake Meal	2.10
Cocoanut Meal	1.55

San Francisco Markets.

San Francisco, Feb. 14, 1906.

Butter.

Receipts of Butter showed a material increase, but the general market maintained a firm tone with values for extras advancing 1-2c on Change. Strictly fancy offerings were not over-plentiful and were held well in hand at improved quotation.

Fresh California extras	31
Fresh California, firsts	28
Fresh California, seconds	24
Eastern extras	26
Storage, California, axtras	20

Cheese.

California, new	13½
California firsts	13
California seconds	12
Eastern, Cheddars	15½
Storage, California	14
Storage, Eastern	15

Eggs.

Offerings of Eggs were liberal yesterday, but under free buying the market maintained a steady tone, at the closing rates of the preceding day, speculative interests absorbing the surplus stocks for storage purposes.

Eggs, Fresh Ranch	18
Firsts	17
Storage, Eastern	14

Poultry.

Old Roosters, per doz.	4.50@5.50
ung Roosters, per doz.	6.00@7.0
Hens, per doz.	4.50@7.00
Ducks, per doz.	5.00@7.00
Turkeys. per lb.	15@18
Geese, per pair	2.00@2.50

Live Stock.

Still higher prices are quoted for Hogs, and the market rules strong at the improved prices, with trading vigorous. Values for Live Stock are without variance and the general market continues active at firm prices.

Hogs, per lb., 80 to 130 lbs.	6¾
Hogs, per lb., 130 to 250 lbs.	7
Hogs, per lb., 250 to 350 lbs.	6½
Hogs, per lb., rough heavy	4½@5
Prime Steers, lb	7¾@8
Cows, per lb.	5½@6¼
Calves, lb.	5@5½
Sheep, ewes, per lb.	4½@5
Lambs, per lb	5@7
Wethers, per lb.	5@5½

Potatoes.

River Burbanks	50@85
Oregon Burbanks	75@1.20
Salinas Burbanks	1.00@1.50
Sweets, Merced	75@1.25

Vegetables.

Asparagus, per lb.	10@12
Rhubarb, per lb.	6@9
Onions, yellow, per sack	75@1.00
Bell Peppers, green	17@22
Cucumbers, per doz.	75@1.00
Tomatoes, per box	1.25@1.75
String Beans	17½
Wax Beans	18@20
Summer Squash, per box	1.50@2.00
Green Peas, per lb.	2½@5

Citrus Fruits.

Navels, fancy	2.50@3.00
Seedlings	1.00@1.25
Lemons, standard	1.00@2.50
Grapefruit	1.00@3.25
Tangerines	1.00@1.50

Fresh Fruits.

Apples were in light supply and firm at the old standard of values.

Apples, per box, extra	1.75@2.00
Apples, fancy	$1.25@1.50
Cranberries, per bbl	15@16

Beans, Dried.

Limas	4.90@5.00
Pinks	1.90@2.00
Small Whites	3.15@3.25

"Sheds water like a duck's back"

An ideal roofing must be absolutely water-proof, practically fire-proof and alway weather-proof.

Rubber Sanded Roofing

Is proof against everything an ideal roofing should be proof against. Water flows off of it as fast as it falls. It is practically a fire-proof roofing—cinders, sparks or blazing brands falling upon it will burn themselves out, without injury to the roof. It is weather-proof in every climate. A building is warmer in winter and cooler in summer, than under any other class of roofing, because it is a non-conductor. Be sure to investigate thoroughly, that

Wear-Proof Surface of Clean Flint Sand.

"Pioneer" Rubber Sanded Roofing is put up in rolls —ready to lay and is easy to put on. A complete kit of roofing supplies is furnished with each roll. Our Booklet "D" will tell you all about the roofing question. Send for it today.

Pioneer Roll Paper Co., Los Angeles, Cal.

Black Eyes	4.40@4.50
Bayos	3.40@3.50
Red Kidney	3.50@4.00
Horse Beans	1.65@1.85

Hay.

Barley, new	$8.00@11.00
Alfalfa	7.50@12.00
Wheat	11.00@16.00
Oats	7@12.50

Grain.

Wheat	$1.33½@1.36¾
Barley	1.22
Corn	1.33
Oats	1.50@1.70
Rye	1.45@1.52
Rolled Barley, per ton	26.00@27.00
Bran, per ton,	19.50@20.50
Feed Corn Meal, per ton	20.50@30.50
Middlings ½	26@30
Cracked Corn, per ton	30@31
Oil Cake Meal, per ton	37.00
Cocoanut Cake, per ton	22.00

Hops.

Grades	8@11

CITRUS MARKETS

There has been little fluctuation in the Eastern citrus markets during the past week, in fact, for several weeks. Both prices and weather have been uniformly good.

NEW YORK, Feb. 20.—Twenty-five cars were sold at auction today. The market is very strong and prices are practicallly unchanged. The weather is favorable.

NAVELS.

Don Quixote, ch Semi-Tropic Ex.	$2.55
Eagle, xc. Riverside Exchange	2.55
Eagle, xc, Riverside Exchange	2.95
Blue Globe, xf, Riverside Ex.	3.10
Hunter, st, A.C.G. Exchange	2.65
Pointer, xc, A.C.G. Exchange	2.70
Stag, xf, A.C.G. Exchange	3.05
Belt, sat, R. H. Exchange	2.80
Lochinvar, ch, R. H. Exchange	2.95
Gold Buckle, xf, R. H. Exchange	3.15
Royal Knight, xf, R. H. Exchange	3.25
Our Pride, xf, Riverside Ex.	3.15
California Beauty, xf, Whortley Strong	2.55
La France, ch, J. H. Kuns Ft Co.	2.45
World's Pride	2.60
Golden Eagle, st, C. C. Chapman	2.75
Old Mission, fy, C. C. Chapman	3.10
Old Mission, fy, C. C. Chapman	2.90
Magnum Bonum, J. A. Maddock	2.75
Magnum Bonum, J. A. Maddock	2.85
Santa Fe, st, Moffatt Frt Co.	2.75
Fountain, fy, Moffatt Frt Co	3.00
Carnation, xf, Moulton & G.	2.75
Gypsy Queen, xf, Moulton & G.	3.05
Tropical Queen, xf, Moulton & G.	2.80
Valle Vista, fy, Hemet Dist.	2.80
California Best	2.80
Vista Bonita, xc, W. F. Whittier	2.85
Whittier, xc, W. F. Whittier	2.90
Whittier, xf, W. F. Whittier,	3.15
Vista Bonita, fy, W. F. Whittier	3.20
Sunflower, xf, C.C.U. Crafton	3.00
Blossom, ch, C.C.U. Crafton	2.80
Warrior, xc, Stewart Frt Co.	2.85
Signal, xf, Stewart Frt Co.	3.00
Laurel, xf, Call Fruit Co.	2.95
Aster	2.95
Clover, xc, Redl. Or. Gro. Assn.	3.05
Sweetheart	3.25

THOMPSONS IMPROVED NAVELS.

Tropical Queen, st	2.80
Carnation, xc, Moulton & Green	3.00
Columbia, ch, National Or. Co.	2.90
Orchard, ch, National Or. Co.	3.35
Red Globe, xc, Riverside Ex.	2.95
Blue Globe, xf, Riverside Ex.	3.15

NAVELENCIAS.

Magnum Bonum, J. A. Maddock	3.15
Magnum Bonum, J. A. Maddock	3.00

LEMONS.

Corwin, xc, W. S. Corwin	2.70
Corwin, fy, W. S. Corwin	2.95
Whittier, xc, Semi-Tropic Ex.	2.85

GRAPEFRUIT.

Lochinvas, ch, R. H. Exchange	3.10

TANGERINES.

Blue Globe, xf, Riverside Ex.	2.05
Rialto Girl, fy, F. P. Corson	2.15

BLOODS (HALF BOXES.)

Princess, fy, Call Frt Co.	1.45
Laurel, xf, Call Frt Co.	1.60
Our Pride, xf, Riverside Ex.	1.70

Foreign Lemon Sale.

NEW YORK, Feb. 20.—Eleven thousand boxes of Sicily lemons were sold at auction today. The market is 25c higher. The next sale will be held either Feb. 28 or March 1, when 23,000 boxes will be offered. The cargo offered today was in good condition.

Fancy 300's brought	$2.75	to	$2.95
Choice 300's brought	2.65	to	2.80
Fancy 360's brought	2.75	to	3.05
Choice 360's brought	2.70	to	2.85

Climate and Crops

General Summary.—Warm, cloudy and showery weather prevailed nearly all the week throughout the State, with heavy rainfall Wednesday and Sunday in some sections. In the northern part of the State the rains caused a rise in the rivers, but no damage was done.

Farm work was somewhat retarded by frequent showers, but the rain was very beneficial to all growing crops. Grain made good growth, and is looking strong and thrifty. Present prospects are that the grain and hay crops will be fully average in all parts of the State, while in some sections the yield will probably be much above average. Plowing and seeding are completed except in a few places. The grain acreage as a whole is about the same as last year. Work is progressing in hop fields and sugar beet planting continues. Green feed of good quality is abundant except on some of the high ranges and stock are in good condition. The seasonal precipitation in the central and northern section is still below average, but the rainfall since the first of the year has been remarkably well distributed and at present is sufficient for all purposes.

Deciduous fruits are rapidly blossoming in all parts of the State, and give promise of good crops if not injured by late frosts. The season has been very favorable for fruits, grapes, and walnuts, and the yield of honey in Southern California will probably be one of the largest known. Orange picking and shipping are in progress in the south.

Eureka Summary.—Crops made rapid growth and warm rains gave gave grass new life. Large acreage sown to grain: prospects good for exceptionally heavy crop. Most farmers are through plowing. Stock are improving.

Los Angeles Summary.— Warm weather without drying winds, following the rains, gave great impetus to crops, which are doing well, with promise of an exceptionally good season. Ground is being prepared for beet planting.

VENEERED TREE PROTECTORS

Our readers will notice an advertisement of the Hart Pioneer Nurseries, of Fort Scott, Kansas, in this issue, calling attention to their Veneered Tree Protectors.

We have seen a sample of these protectors, and judging from the high class testimonials that this firm furnished, they evidently are a good thing and will do all they claim of them, such as protecting the trees from mice, borers, rabbits, hot winds, etc.

We notice testimonials from some of the largest orchardists in the country, who are using them. also from leading agriculturalists and secretaries of many agricultural societies, advocating the Protectors.

If any of aur readers have orchards to protect, they will do well to correspond with the above firm and get their circular and samples.

Mr. E. G. Wood, the owner of the oldest established orange nursery at Alhambra, still has a number of Washington Navel and Valencia trees on hand. These he guarantees to be true to name and to be inferior to none produced in this State. They are three-year old buds and four-old roots. At the rate orange trees are being picked up it is well to get in touch with him early, before the best are all sold.

Mrs. Albert Martin, whose poultry yards are near East Lake Park, Los Angeles, has a few pens of fine Barred Rocks and Buff Orpingtons from which she has a few settings of eggs for those who wish fine stock.

As a specialist in the grafting of walnut trees, Mr. E. F. Richman. of Orange County Nurseries, Fullerton, has made a success, and has a quantity on hand for this year's planting. Mr. Richman also has on hand a full line of citrus and deciduous trees as well as a full line of ornamentals. A card to him will bring a price list.

The California Carnation Co., of Loomis, Cal., advertise one of their specialties this week. "Burbank's Phenominal Red Raspberry." It will be worth while to write them for prices and particulars and mention seeing their notice in the Cultivator.

Klonniger Bros. of Los Angeles, are in the Cultivator with their business announcement this week. A good firm and one that is building up a fine business in poultry supplies.

Mrs. S. H. Church advertises a fine strain of White Wyandotte eggs for sale this week.

H. S. Thompson advertises Barred Plymouth Rock and Indian Runner duck eggs for sale. See poultry pages.

If interested in turkeys read advertisement of Mr. N. Frank Morse, in this issue.

CANCER

IN WOMAN'S BREAST
ANY LUMP IS CANCER

Mailed Free—How to Cure Yourself if Cancer is Yet Small—No Pain.

NO PAY UNTIL CURED—GUARANTEE—
JUST SEND YOUR NAME

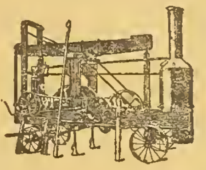
MRS. E. CROSTHWAITE,
954 Arlington Ave., Oakland, Cal.,
President Golden Gate Woman's Club,

Dear Dr. Chamley—I will state, your medicine cured a very large cancer in my breast 11 inches long, extending to my side and armpit in 14 days over 5 years ago. WRITE AND ASK HER. *Don't doubt, don't delay.*

Mrs. A. L. Bailash, 332 Ohio Street, Vallejo, California, was cured at home of breast cancer; also her mother cured of cancer in both breasts. WRITE TO THEM. E. J. (Lucky) Baldwin, Arcadia, Cal., writes: Dr. Chamley cured a large cancer on my lip and two in my throat after X-Ray and other Doctors had failed. I will give $1000 if I fail to cure any cancer or tumor I treat before it poisons deep. You can't afford to make mistakes with Cancer. Life is surely worth sending your name. 130-page book sent free.

My discovery—a Pacific Island plant extract—has cured thousands of Cancers in from 10 to 20 days, after celebrated physicians and surgeons had declared them "as good as dead."

Address, **Dr. and Mrs. Dr. Chamley & Co.,**
25 Third Street, San Francisco, Cal.
KINDLY SENG THIS TO SOME ONE WITH CANCER



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Portable and drill any depth by steam or horse power. 42 Different Styles. We challenge competition Send for Free Illustrated Catalog No. 13.

Kelly & Taneyhill Co
13 Chestnut St., Waterloo, Ia

Williams' Shaving Soap

You *know* that Williams' Shaving Soap is best. If an unscrupulous dealer tries to work off a substitute on you, "what are you going to do about it?" Insist on Williams.

Send 4c. in stamps for a Williams' Shaving Stick (Trial Size).
(Enough for 50 Shaves.)

Williams' Barbers' Bar, Yankee, Mug, Quick & Easy Shaving Soaps, and Williams' Shaving Sticks.—Sold everywhere. Address,

THE J. B. WILLIAMS COMPANY,
Dept. A, Glastonbury, Conn.

Don't Experiment

WHEN IRRIGATING ENGINES AND PLANTS ARE WANTED

Success Engines

HAVE STOOD THE TEST OF TIME AND HARD WORK

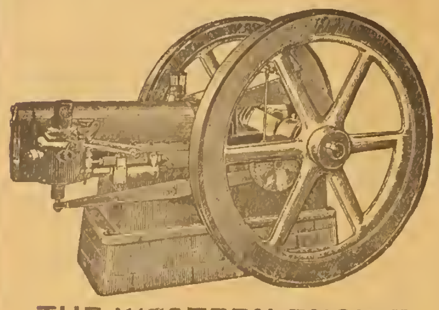
They Are a Success. Our Prices Are Right.

INTERNATIONAL GAS GENERATOR AND POWER CO.
717 North Main Street, Los Angeles, Cal.

MENTION CULTIVATOR

DEEP WELL PUMPS
SHALLOW WELL
AND POWER PUMPS
A. T. AMES
GALT, CALIF.
OAK TANNED CUP LEATHERS

THE WESTERN GAS ENGINE



THE WESTERN ENGINE
Maximum Power at Minimum Cost

"From Factory Direct to User"

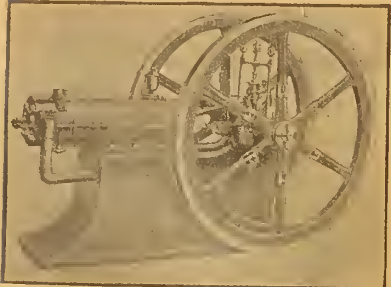
Designed and built by Western experts for Western use with Western fuel. In construction the Western embodies many original, yet practical ideas, which place it in advance of any other make on the market today. The simplest, strongest and best engine for

Irrigation, Power and Electric Plants.
Any Size from 5 to 500 H. P.

Burns cheapest fuel—gasoline, distillate or crude oil—with a saving of 20 to 40 per cent over any other style. Send for Illustrated Catalogue fully describing every detail of construction; tells how and why the Western excels all others; it gives the facts—the proof. Learn what Western engines are doing for others. Send your name today—ask for latest issue, A6.

WESTERN GAS ENGINE CO.
908-932 N. MAIN ST. LOS ANGELES, CAL.

TRIED FOR MANY YEARS

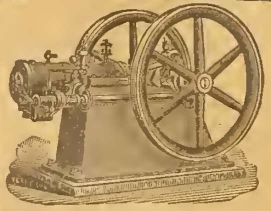


And now stands without an equal. That is the verdict of many who have used the

WHITE & MIDDLETON ENGINE

Complete Irrigation Plants Installed.
Estimates gladly given,

Wm. Gregory
602 North Main St. Los Angeles, Cal.



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Gas, Gasoline and Distillate Engine

Embodying New and Important features in design and operation.
Send for Catalogue E. All information furnished. Address

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RUBEROID ROOFING

The peer of all with 14 years' record for durability and efficiency.
Cheapest because best.

BLAKE, MOFFITT & TOWNE
Both Phones 679
242 to 248 So. Los Angeles St., Los Angeles, Cal.

NATIONAL WOOD PIPE CO.

MADE FROM CALIFORNIA REDWOOD OR SELECTED PUGET SOUND YELLOW FIR

WOOD PIPE

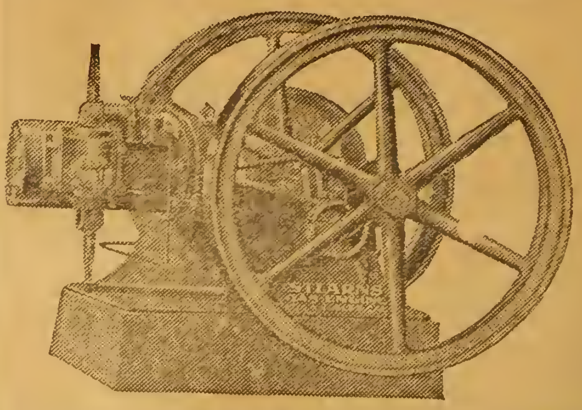
WOODWARD PATENT MACHINE BANDED PIPE
WHEELER PATENT CONTINUOUS STAVE PIPE
BORED WOOD WATER PIPE

Puget Sound Office, Olympia, Washington
Los Angeles Office, cor. Sixth and Mateo Sts.
San Francisco Office, 301 Market St.
A booklet, "The Whole Story About Wood Pipe," mailed free upon request

NO, THIS IS NOT AN ARTESIAN WELL, BUT

AN IRRIGATION PUMPING SYSTEM
SUPPLIED BY
S. J. SMITH MACHINERY CO.
POWER PLANTS, PUMPING MACHINERY AND WATER SUPPLY GOODS
212-214 S. Los Angeles St., Los Angeles, Cal.

STEARNS GASOLINE OR DISTILLATE ENGINE



Has many points superior to any other engine.

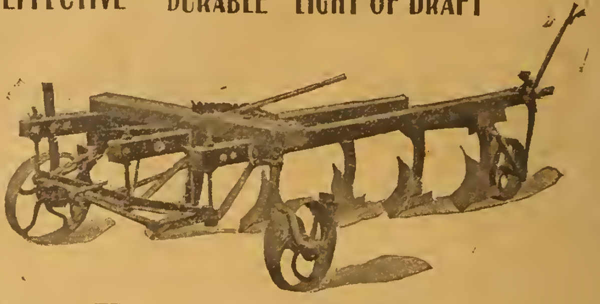
Hundreds in Use
Every One Satisfactory

Built for California cheap fuel.

For further information, write

STEARNS GAS ENGINE WORKS
1001-3-5 NORTH MAIN STREET
LOS ANGELES, CALIFORNIA

Stockton Reversible Gang Plow
EFFECTIVE DURABLE LIGHT OF DRAFT



This is our regular Plow and Land Shifter and Rear Lever. Land Shifter simple and durable. It is in easy reach of operator and there is no danger of wheel running over foot.

Houser & Haines Mfg. Co.
Stockton, Cal.

The New Pomona Pump

We must not attribute all of the success of the Pomona Pumps to the Pump Head or the part of the machinery above the ground, for there is another part just as essential, and this is the cylinder and valves. Our cylinders are made of the best seamless brass tubing made to our order in the East. The valves are made of the best phosphor bronze and are cast and finished complete in our shop.

These valves are of the most improved pattern, have cone-shaped clappers with ground metal seats. There is only one moving part in each valve and we have never had them clogged with sand. The plungers are furnished with three cup leathers, each made from the best oil tanned leather.

With the New Pomona pump-head using a quick return motion and lap in the plungers, these valves have sufficient time to seat before taking up the load of the water column, consequently there is no hammer or jar. The Pomona Pumps are taking the lead for irrigation purposes and are rapidly displacing pumps of inferior design and workmanship.

Send for catalog and estimates for our new plants.

Pomona Mfg. Co.
POMONA, CAL.

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CALIFORNIA CULTIVATOR

DEVOTED TO
AGRICULTURE
IN ALL ITS BRANCHES

LOS ANGELES **MARCH 2, 1906** **SAN FRANCISCO**

THE FIG OF COMMERCE.

No one thing of recent years is fraught with so much that is full of promise and future greatness to California horticultural wealth as the successful introduction of the genuine Smyrna Fig of commerce, together with the Fig Wasp (Blastophaga grossorum). The culture of the orange is more or less confined to the thermal regions of the State, where biting frosts are unknown, and the thermometer never goes below 22 degrees. With the fig, however, the area adapted to its culture is much wider. It can withstand 18 degrees and not suffer. Hence, its geographical distribution is much wider, and as applied to the Pacific Coast, embraces nearly all portions of this State, the sheltered sections of Arizona and New Mexico, Southwestern Texas, the extreme Southern States, Old Mexico, the Hawaiian Islands, the Philippines and Australia.

Winner New York, 1904, score 97½. Used as a model in the American Standard of Perfection.

Farm at Clearwater on Santa Ana Electric Line

W. W. HOWARD'S

S.C. WHITE LEGHORNS

Best Strain, Best Birds.
Greatest Layers. Largest Eggs
WIN THE BLUE AT THE ST. LOUIS WORLD'S FAIR.

FIRST PRIZE HENS, St. Louis World's Fair; also at Madison Square Garden, New York's Great Show, 1905.

All specials and medals—best hen, best head, pure color.

FIRST PRIZE COCK At Madison Square, New York, 1905, and beating St. Louis World's Fair and Boston winners.

FIRST PRIZE PULLET at Madison Square Garden, New York, 1905, as well as one of the best cockerels in the U S.; were sired by our famous Rob Roy Jr

Our patrons report grand success with pullets from our stock; 26 eggs per month 56 eggs in 64 days, 18 eggs in 19 days eggs that weigh 2½ to 3 ounces.

229 eggs already this season.

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Birds and eggs for setting. Price list mailed on application.

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SOUTHERN PACIFIC

A Few Remarks About the Care of Little Chicks

BY A. A. WHITE

37 White Minorca hens laid over 3,000 eggs during the months of December, January, March, April and May. Eggs sold for fancy prices—37 hens earned $275.00 in five months—fed daily on Coulson's Mash Egg Food. A. A. WHITE.

The problem of how to raise to maturity strong, healthy chickens has been and will be a very vital question to all poultrymen, who wish to make a success. I believe the excessive mortality amongst chicks is one of the greatest reasons why many poultry ranches are not paying double the dividends or profits that they should. Look at the amount of time and feed wasted on poorly hatched and wrongly fed chicks (which, as a natural consequence, die,)that would be more profitably spent on healthy stock.

Yet the solution of this problem is not so hard as it appears. The main thing is to get your chicks hatched right and from stock with lots of vitality. This being granted, now comes the FEED QUESTION, the VITAL QUESTION.

It has been proved beyond a doubt that chicks fed on dry food at least for three or four weeks, have stronger constitutions and are far better developed than soft-food-fed chicks. Why is this? Because the natural food of many fowls is seeds, bugs, etc., for which nature has provided.

WHITE MINORCA ROOSTER
Raised on Coulson's Chick Feed. The Feed is the Making of the Chick.

Now, anyone knows that a hen always raises her brood with better success and also far more healthy than brooder chicks; simply because she forages around and finds them a grain here and another there, so the result is they work and exercise at the same time, resulting in healthy bodies, and good growth.

I have proved to my own satisfaction that Dry Feed is IT every time. My experience dates back to when I used crumbly soft food for little chicks and although I could raise a fair percentage, yet I had better success with dry chick food; particularly the ready mixed feed, which I got from my store-keeper, called COULSON'S SPECIAL DRY CHICK FOOD. The first sack I bought seemed high priced but say, the success I had warranted it, for I found it went further than the other feed, and the chicks grew so fast.

A small batch of chicks, about 200, were fed on Coulson's Special Dry Chick Feed for the first month entirely. I scattered it on chopped straw; etc., and made them eat it up clean, so that I couldn't see any left in the straw at night. After they were a month old I fed them with COULSON'S GROWING CHICK FOOD, which was a more bulky food, and therefore, forced them on growing. They were a fine bunch of Chicks, strong and chirpy, and REMEMBER THIS, no bowel trouble or picking of feet. They were too busy hunting for their food(Coulson's Special Dry Chick Food) in the straw, to have time to stand around looking for feet to pick at, and their crops only taking a seed at a time, were not gorged, but kept grinding away steadily. At eight weeks old I had 197 chicks left out of 200 out of the incubator. How's that for a percentage? Of this number I sold four dozen broilers at eight weeks old for $3.50 per dozen; average weight being One Pound, fourteen ounces and some went over Two Pounds. These were just White Leghorns, not heavy breed chicks.

That convinced me that dry feeding was the solution of how to raise chicks successfully and COULSON'S SPECIAL DRY CHICK FOOD is the feed to do it with economy. My chicks at eight weeks of age had cost me about o cents each, and were fed entirely on COULSON'S SPECIAL.

RAISED ON COULSON'S CHICK FEED.

ADVANTAGES OF COULSON'S READY-MADE CHICK FEED.

A prepared Chick Feed composed of sound selected grains broken to the proper size and blown free from dust is the most economical feed for young chicks. One hundred Pounds will feed as many chicks as Two Hundred Pounds of ground grain.

Why It is Preferable.

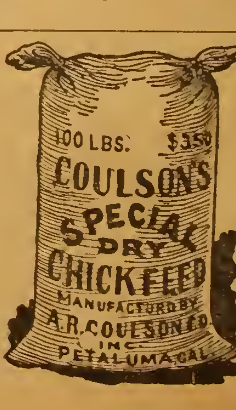
The proper feeding of Poultry is without a doubt the most essential factor in the raising of any kind of poultry for profit. Considerable advancement in the feeding of poultry has been made in the past few years especially in the feeding of little chicks.

Chicks should be fed a feed that makes healthy, well developed bodies. COULSON'S SPECIAL DRY CHICK FEED contains the ingredients that are the best adapted to give nourishment to the growing chicks. Sweet, tender seeds, cracked grains, blown free from dust, cut oat meal, tiny pieces of cooked and dried meat, fine particles of fresh cut bone, charcoal, burnt bone, and other good things.

It is a clean, sweet feed that is easily digested, and chicks show an increase in weight, strength and beauty when fed it exclusively. Little chicks need no other food for the first six weeks. You can feed your chicks entirely on COULSON'S SPECIAL DRY CHICK FEED the first six weeks at a cost of about 2 cents apiece.

Ask your feed dealer about Coulson's Special, and be sure that he don't sell you something else. Remember it is COULSON'S that you heard so much about, and make YOUR WILL POWER strong enough to insist on getting Coulson's.

If your dealer don't keep it, write us, and we will tell you where and how to get it.



COULSON POULTRY AND STOCK FOOD CO., PETALUMA, CAL.

CALIFORNIA CULTIVATOR

Vol. XXVI—No. 9 LOS ANGELES, CAL., FRIDAY, MARCH 2, 1906 Subscription $1 a Year

Keeping a Record of the Milking Cows

By Mrs. Minna E. Sherman, Fresno, Cal.

The farmer rarely keeps books of expenses of the farm, each field, orchard, vineyard, horse stable and cow barn should have their separate accounts. The leaks are nearly always small ones, while the disbursements are large—so often the entire profits leak away in small dribbles.

It is said of an extensive farmer and vineyardist of this neighborhood that his system of bookkeeping is so wide-reaching, that even, when he is in Germany he can check off the expense account and order the horse sold that wears out an undue propor tion of shoes during the year. Now, please do not ask me if I know this is true! I only know what I hear. But it is none the less true that few know where they are losing money, and where they are making it, except in vague way, otherwise the general farmer would be rich in California.

In the dairy the need of culling out the non paying cows is imperative, for they are not only eating but costing money for milking and the wages in California are always high for milkers, for they are scarce enough to command their own terms, that of milking only and of thirty cows mak ing a string even if the thirty only gave a pint of milk apiece. Fortunately, it is an easier matter to cut off the leaks in the dairy than in the general farming, for in sowing a crop there are other matters beside the good seed and general cultivation, matters not under our control for though man may propose well, if God does not dispose the rain to fall in due season the crop is lost.

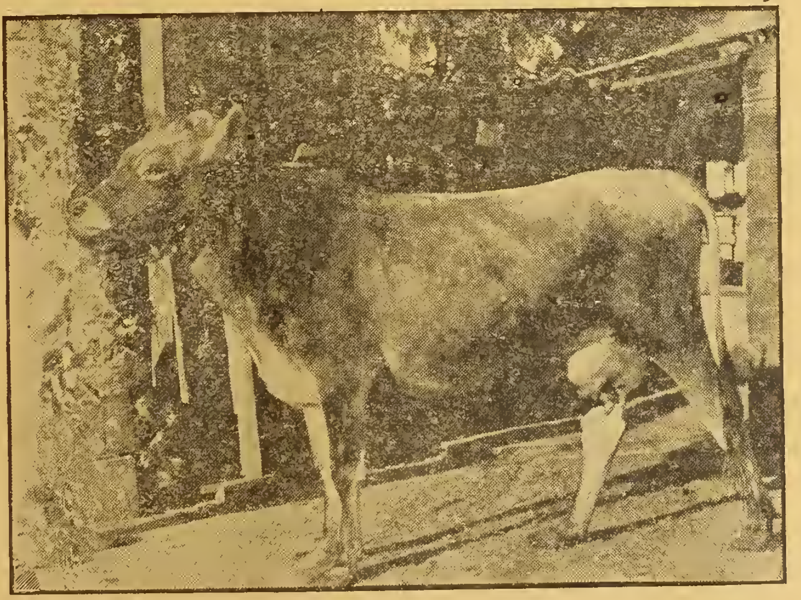
From a herd of full bloods, the culls are not heavy, as the blood is as one and there is not an attempt of Nature to perpetuate an ancestoral propensity that is at variance with the milk quality the dairyman is interested in increasing. The culls during five years averaged six to a hundred in my grade herd after it reached the three hundred pound of butter standard. This is not including the cows that age had rendered useless.

* * *

Sometime ago I spoke of the full blood herd sold in 1901, as having given a profit of over fifty dollars a year per head,. Some of the readers could hardly believe it. Now the present owners of these cows reports that they make a return of $12.00 a month per head from the creamery. Allowing fifty dollars a year for care and maintenance this leaves $94.00 dollars per head. I believe it, for I had thought by 1904 to have had the herd producing $100.00 a year profit, but I was forced to sell them.

The cow records begins with weighing and testing the milk, now, it is hardly necessary to explain the Babcock test to anyone living within a moderate distance of a creamery. The large steam machines are merely labor saving and are not more accurate than the smaller hand machines. Every farm should have a small machine if it is only a two or four bottle one, even when only two or three cows are kept, the children take great interest in the records and it becomes an incentive to them to do accurate and careful work. Taking samples for four days in a month give practically as accurate a test as every day samples.

Those having only one cow can test her readily on the twice a year system. The man at the creamery is usually willing for a consideration to run the milk through when he is testing.



Goldsettie of La Palma, owned by C. W. Leffingwell. The official tester of So. California Jersey Breeders Ass'n. believes she will make one of the greatest milkers of the country

The Vermont Experiment Station has found by comparing a large number of monthly records that if cows that freshen in the spring are tested six weeks after calving and again between the six and a half and seven and a half months the record is practically accurate. For the cow that freshens in the summer the first test is made eight weeks after calving and between six and seven months later on. Cows that freshen in the autumn are tested nine weeks after calving and again at five and a half to seven months afterward. After making the second test the results are added to the first test then divided by two, say at six weeks the cow gave forty-four pounds of milk, testing 3.8 at six months the milk weighed ten pounds and tested 4.8 the time being one hundred and ninety-five days. Adding forty-four to ten gives fifty four, as the amount of milk; dividing it by two gives the milk average of twenty-seven pounds, while adding 3. 8 to 4.8 gives 8.6 the average of which is 4.3 of butter fat, multiply the amount of milk by the butter fat, gives 1.16 hundredths as daily production, this multiply by one hundred and ninety-five days gives two hundred and twenty-six pounds of butter fat. Where only one test is made in the year it is best made at the seventh month. This test will not do to weed out on a herd that are good milk cows but answers well to select cows for a herd to use to breed up; from the scrubs using a registered sire.

Sometimes, in grade cows the productive portion comes early in the milk flow, I had one half Holstein and half Durham that gave the first of her milking as high as ten gallons, or eighty four-pounds of milk daily, making as high as three and a half pounds of butter in a day, but she would run down in milk so at the end of seven months she was dry about four or five months, she easily made three hundred pounds of butter a year. This was a freak made by crossing two well established breeds, after a few experiences that were not so fortunate as this one, but went decidedly to the wrong side of the ledger, I stopped cross breeding and sent the Jerseys and Durham to sires of their own race even, when I had an advanced registered sire of the Holstein at home.

The test at the end of seven months is good for weeding out of native cows for as they freshen they can be sent out to fatten and dried off for the butcher, using those that show enough merit as butter producers to breed up from. It is surprising how many of the native cows will be profitable when handled as the pure bloods are handled, or scrub under thorough-bred conditions take on new productiveness, a few, however, will slide off into beef, these are sold off and the best only are kept until replaced with half breeds. When the first half bred heifers come into milking it is time enough to begin to test them monthly by weighing and sampling the milk, making a composite sample of four days' milk, and the amount of fat produced at the test is multiplied for the monthly amount according to the number of days in the month. The month of twenty-eight days or February is multiplied by seven. The thirty day month is multiplied by 7.50 and the thirtyone day month by 7.75. But this paper is running out too long and I will finish it next week as there are a number of questions to be answered.

INDIGESTION IN THE COW

When I brought my cow in last night she was badly bloated and we were compelled to give her a dose of soda and walk her around to reduce the bloat. She was not inclined to eat. She refused alfalfa hay, but ate her mash and some green oats. She has begun to chew her cud and this evening she ate oat hay and seemed to enjoy it . Her milk has fallen off from four gallons to seven pints. Could such a condition of affairs be due to indigestion alone? Also what rule should be followed in feeding a cow in full milk? Should she be fed as much alfalfa as she will eat, and given a two gallon bucket full of bran mash and some beets in addition? We have been indiscreet, I fear, in feeding our cow. Saturday morning she evidently was suffering from indigestion. I foolishly and ignorantly gave her 14 pounds of beets at one feed. She had not been having them regularly. If you can help us in our difficulty we will appreciate it; also if you will answer this by mail instead of in the Cultivator it will be a great favor. Mrs. M. C.

Indigestion will affect the milk flow at once. You will have learned the necessity of making all changes slowly by the mistake made, but after all it shows a generous heart to feed too much, and when that amount has been gradually led up to the cow will show her appreciation at the pail. The present ration is very narrow and it would be well to feed some rolled barley and cracked corn, one third barley, two thirds corn, or even middlings instead of bran. Alfalfa hay will not hurt the cow and let her feed be increased slowly until she has all she is willing to eat of it; then begin to increase the grain and then find out how much she will pay for at the pail and let her have it. After a cow has had bloating it is well to give her after the symptoms of distress are passed, a pound of glauber salts with two tablespoonful of ginger. Give plenty of water with it to have full cleansing effects.

Deciduous Fruit Culture

BY J. W. MILLS, POMONA, CAL.

A GOOD PEAR.

Editor Cultivator: Please will you tell me which is the best pear, the P. Barry or the Winter Nellis?—Mrs. M. E. G.

Winter Nelis is the best pear of the two but is a shy bearer in some localities, in fact, is a dead failure, while in other sections it bears well. There may also be districts where P. Barry is a shy bearer, but on the light, sandy soil of the Chino valley it produces well and early; Winter Nelis does not.

SOY AND HORSE BEANS.

Editor Cultivator: Will you kindly tell me through your valuable paper, what is the proper time to plant Soy or Horse beans? Will they furnish a green crop through the dry months for chickens to pick at, if planted on hillside? May they be sown broadcast or is it better to plant them in drills?—W. L. W., Santa Rosa.

Neither of these plants are good for chicken pasture as alfalfa. Both are annuals and are just as hard to start, more easily destroyed by the chickens and not satisfactory. However, an experiment is always a good thing. Plant your soy beans in May after the ground becomes well warmed up as they will not do well in cold ground and will not stand cold weather. Horse beans should be planted early in October so that they will come up with the first rains. The horse bean is a winter growing plant and the soy bean is not.

You will find it difficult to start any kind of a crop if the chickens are allowed to feed on it from the beginning. It is advisable to drill in soy and horse beans as they have large seeds. Alfalfa may be drilled to advantage but your land needs to be in extra fine shape and well firmed. If you broadcast it, roll and harrow with the teeth turned back.

REDWOOD SHAVINGS.

Editor Cultivator: I wish to know in the next issue of your paper whether or not it would be injurious to trees or shrubs, to put Redwood shavings in the ground after they had been used as bedding for stock, also of what value is a piece of bottom land that has a foot of pure sand over it; underneath is very rich soil. I was thinking of dead furrowing it and planting pink beans in bottom of furrows.—J. D., Bostonio.

Redwood shavings whether used for bedding or not will not injure your trees. They will not injure plants; do not know that anything will be injured but we have found in life, that there are exceptions to all sorts of rules, and there are so many things that we don't know that we are not prepared to give an iron-clad rule even about the use of Redwood shavings. We do know, however, that there is no better mulch for using on seed beds where a great many varieties of seeds are to be germinated than Redwood sawdust. We would not hesitate ourselves to use the Redwood shavings.

Your idea of furrowing out and planting the beans in the bottom of the furrows is a good one. Your land seems to be well suited for alfalfa if you can get a good crop of weeds to grow and sow the seed broadcast in the fall. The weeds will mulch the ground and protect the young alfalfa from the frost till the roots get into the good soil.

(Redwood or pine shavings and sawdust, even though fresh from the mill will not injure any plant life, whether used as a mulch or mixed with the soil. The most tender seeds have been started and grown in Redwood sawdust and shavings. Ed.)

GRAFTING DECIDUOUS TREES.

It is now time that all scions for grafting should be cut and put down in damp (not wet) sand in a cool place. The term 'cured buds" is applied to those which have ben cut and put down in sand or some material which prevents them from drying or becoming moist but retaining the same condition as when cut from the tree. When such buds or scions are placed in a tree that is just beginning to grow, the proper period for grafting, they will take the sap from the tree just as a dry brick will take water from a wet sponge, except that it is an osmotic action. For this reason, cured buds are the best. A bud or scion commences to take sap as soon as it is joined to the stock unless the union is imperfect or the scion contains the most sap, in either case of which there will be a failure.

The best time to graft is when the buds just begin to open, though it may be done after the new growth is one to two or three inches long on apples and pears. Apricots are not successfully grafted on large branches but are best worked by sawing off the tops and budding the sprouts that grow.

It is best to graft the whole top of the tree at one operation than to graft part one year and the balance the next. This plan is sometimes followed and the result is always an uneven or an unbalanced top. Side branches that project to one side should be trimmed off close and the trunk and main branches whitewashed to prevent sunburn. Should there be a very rank growth that would endanger the grafts by being blown out, top them as to retard the growth and stiffen the wood.

Limbs two or more inches in diameter should receive from two to four scions each, and when they have about capped the sawed end of the stump, they should be thinned so as not to crowd. Usually one will take the lead and be sufficient top for one stump, but the purpose of the other is to cap the stump with new bark before decay begins.

Any method of grafting will succeed when the stock and scion are in proper condition, the inner barks match and the work is quickly done. The materials may be in first class condition and the workmanship perfect, but if not quickly done and the uniting allowed to become a little dry, the work will become lost. For this reason bark grafting is usually very successful as the bark is lifted and the scion inserted simultaneously.

Bark grafting is the most rapid method, being very satisfactorily done by the use of a large nail, No. 14 is a good size. File it off so that it will have one flat side, but at an angle. Insert this at the top of the stump between the wood and bark, nearly as deep as the scion is to go; remove the nail and insert in its place a scion which has previously been trimmed and press it down firmly. Make a ring of these around the stump, paint with wax, wrap with coarse twine and wax again.

The saw graft which consists of sawing down the side of the stump and into the top, then cutting out the incision with a sharp knife, is a good method. The groove is made larger at the top so that when the scion is made to fit, it may be pushed down from the top so that it is snug. Wrap and wax as described. The cleft graft is not desirable in large branches as it splits the limbs and promotes rapid decay. All cuts should be coated over with wax.

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Practical Farm Science

TABLE GRAPES

My experience in raising table grapes for the past fifteen years in California has been in the Coast section of this county, so these points will apply to similar sections in this part of the State. The first and most important thing about raising a table grape that will be both meat and drink is in the selection of suitable soil. I have talked with people who thought they were growing good grapes on damp sandy land. But large clusters of pale, sour berries are not table grapes, so choose a warm upland with rather a heavy subsoil and you will have both color and sweetness

* * *

Cuttings—Taking it for granted that you have your ground plowed early in the season and well pulverized—select good cuttings from a healthy vineyard making them 12 to 14 inches long. Plant them in vineyard form where you wish them to grow. I prefer a cutting to a rooted vine for the following reasons. In planting a rooted vine you necessarily must cut off almost the entire root system and the vine will be from one to two years in recovering from the stroke, whereas a cutting planted in vineyard form the roots remain undisturbed and at the end of two seasons you will have found that the rootlets have covered the entire square allotted to each plant. Then with rather severe pruning the first few years of its life until the stock has become stiff and upright, you will have laid the foundation of a vineyard that will be bearing fruit in generations to come.

* * *

Planting—February and March (first half) are the best months. Procure common baling wire and cut and recouple it in lengths that you want to set the vines apart and then stretch tightly across the field keeping the end stakes always in line and plant a cutting at each coupling in the wire. I use a shovel in digging the holes and set plants seven or eight inches deep. In very sandy soil one could set much deeper with good results, but on good grape land deep planting puts the cuttings where the soil remains too cold, and if it starts at all a few sickly roots will come near the surface, whereas you want strong roots to come out at the bottom of the cutting. I have a friend who ruined a 30-acre setting last year by deep planting, whereas a few reserves that he stuck in shallow on the same ground made large growth.

* * *

Cultivation.—Keep the ground well stirred and free from weeds and plant no other crop between the rows. With such treatment and the moisture of the ordinary winter rains you should get 95 per cent of a stand. Do not irrigate unless you are obliged to do so on account of no rain. The best table grapes are raised without irrigation.—G. D. Less.

THE MULBERRY IN CHINA

The lunsang or domestic mulberry is cultivated in China in preference to all others for the silkworm. Most mulberry plantations are begun with the wild plant, to which the domestic is grafted. The spot chosen is high and level, if possible, and should be rich. A wet soil is injurious to the roots. The trees should planted 6 or 7 feet apart in holes 1 1-2 to 3 feet in diameter, wherein liquid manure has been placed. This, after the roots have had the earth sifted and tightly packed around them, obviates the need of daily watering. In February the shoots are cut down to within 1 1-2 feet of the ground. Then two sprouts are allowed to grow which by October, ill be some 5 or 6 feet high. In February of the third year the upper parts are pruned to about 1 1-2 feet above the original stem. Again on each branch only two sprouts are allowed to grow, which by October will be some 5 or 6 feet high. These are pruned at the same time, February, and at the same length as the others. This process is continued for five years, after which they are allowed to grow without pruning until May or June, when both stems and leaves are cut off, and are called the first crop of mulberry for feeding. If all the leaves are not consumed they should be cut off, or else the next year's growth will be thin and small. Subsequently two sprouts only are permitted to grow on each uppermost branch all sprouts below and on the trunk being rubbed off, so that in the Fall there will be in all 16 branches to supply the next year's crop. The full grown tree is about 5 feet high, so that it can be easily cultivated and leaves gathered by any ordinary-sized person. The longest-lived trees are said to last over 50 years. One tree will produce from 75 to 100 pounds of leaves.—Consul Haynes of Nanking in Consular Report.

ADULTERATED FERTILIZERS.

Nitrate of soda which is used to a considerable degree by the market gardeners and florists is often adulterated to a serious degree at the present time. For this reason it is advisable for every one to exercise special care and purchase only from trustworthy dealers. The more common adulterants are common salt and salt cake from the manufacture of acids. Both are worthless as fertilizers and in themselves contain no plant food. The nitrate is shipped direct from Chili and was formerly sent in 310 pound bags which are very clumsy. It is now shipped in 200 pound bags, and it is preferable to purchase nitrate in the original bags.

"Salt cake residue made as a by-product in the manufacture of nitric acid is also used at times to adulterate nitrate of soda, and in some cases has been sold as such. It is frequently called niter cake which name gives it a false value from the gardener's standpoint."

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MADE TO ORDER

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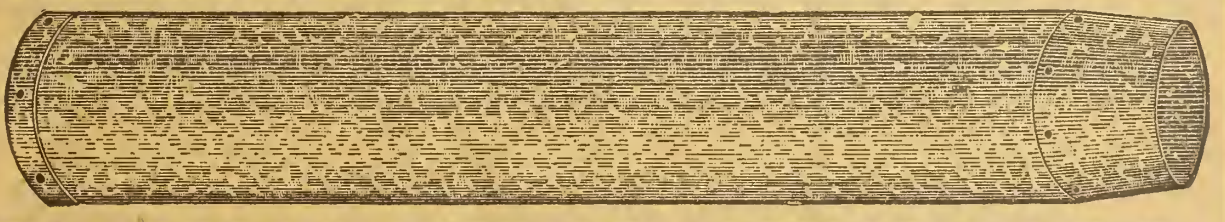

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SAVES WATER, GRADING AND TIME

The ***only*** way to ***Irrigate Alfalfa. Cheaper*** than ***Flumes.*** This is only ***one*** of our ***specialties.*** We make ***Riveted Water Pipe*** in lengths of ***Ten Feet*** from ***Single Sheets.*** Let us ***prove*** to you that we make ***Pipe*** and ***Tanks Right.*** WRITE FOR CATALOGUE.

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Minnewawa Home Packing Co., Fresno, Cal., Agents for Fresno and Tulare Counties

TREES

True to Name

It is of the utmost importance that young trees, shrubs and vines for planting be true to name. They must also be well rooted and properly prepared for shipping and planting.

We have four separate nurseries, comprising over eleven hundred acres, in different sections of the country, each having its peculiar soil best suited to the special requirements of different trees, shrubs and vines for their perfect development. It is a costly method for us to pursue, but it enables us to grow the very best on the market.

CALIMYRNA FIGS

Over fourteen years of careful experimenting with the growth of the Smyrna fig, or fig of commence, in this country were required before we could say that we had been entirely successful in propagating this valuable fig, and for the past five years we have been growing this fig in its perfection, drying, packing and marketing it.

There are several varieties of the Smyrna fig, but with our varied experience in this line we feel warranted in recommending one, the Calimyrna, as the most profitable and best for all commercial purposes. We are able to supply almost any desired quantity of these superior trees.

We protect the Calimyrna Fig with the seal shown herewith, which is attached to each bundle of ten trees.

We have this season a superior stock of

PEACHES, PLUMS,
PRUNES, PEARS,
APPLES, APRICOTS,
CHERRIES, OLIVES,
NECTARINES, ETC.

These trees are all grown in our nursery plant, No. 3, which has a rich river bottom soil, permitting the most perfect rooting. Our

ORANGES,
LEMONS,
POMELOS,
LIMES,
CITRON

And all of our citrus fruit trees are grown in our nursery at Exeter, which has a deep, rich, black loam and is particularly suited to citrus trees. All of the standard varieties will be found in our stock.

GRAPE VINES

As we are the largest growers on the coast of the best varieties of raisin, wine and table grapes and also make a specialty of vines grafted on phylloxera resistant roots, we are in a position to fill your orders most satisfactorily.

CATALOGUE FREE

Our catalogue, in either English or Spanish, is profusely illustrated and gives a good idea of the immensity of our stock. We mail it free to any address on receipt of 6c postage. Price list mailed on application.

BOOK YOUR ORDERS NOW

If you are contemplating doing any planting it would be well for you to place your order as early as possible. We will book your order now and ship your stock when it is desired.

Paid-Up Capital, $200,000.00.

Fancher Creek Nurseries
(INCORPORATED)
GEO. C. ROEDING, President and Manager
BOX 14, FRESNO, CALIFORNIA

California Horticulturally

BY JOHN ISAAC, SACRAMENTO, CAL.

A FAVORABLE FRUIT SEASON

Prospects for a deciduous fruit crop in the northern counties still continue favorable. There has now been ample rainfall to insure a good season, and it has come at the most opportune time, while continued cold weather early in the season prevented the fruit trees from too early blooming. Almond trees which often bloom early in January did not put out this season until along in February; apricots and peaches are now following and all are later than usual. This gives hope of greater immunity from spring frosts which so often catch the early bloom or the young fruit. It is said that "You should not whistle till you are out of the woods," and we are not yet through the winter season, but for all that we have so far had a very propitious season; all deciduous trees here are well loaded with fruit buds and at present time it looks as though we should have a bumper crop of these fruits.

* * *

TO IMPROVE THE STATE FAIR

The new management of the State Agricultural Society is taking every means to lift the State Fair out of the slough into which is has fallen and to make it really and truly a representative exposition of the agricultural and horticultural industries of the State. To this end the State Horticultural Commission has been asked to co-operate, and all the County Horticultural Commissioners will be asked to lend their aid, in order that the fruit display at the next state fair may be truly representative of the whole state. It is hoped to have the finest display of fruit and fruit products on that occasion ever got together and to show not only visitors but our own people, what California can produce. Mr. Al Lindley the Secretary, by the way, is a Los Angeles man, and this should be sufficient assurance that he knows how to do things as they should be done, and while horse races will still be an important feature, they will not as heretofore predominate over all other features, nor be made the most important.

* * *

CLOVERDALE CITRUS FAIR

Cloverdale, Sonoma County, has just finished its Fourteenth annual citrus fair, and it has been a highly successful one. These fairs have increased in interest from the commencement, and it was found necessary this year to very greatly enlarge the pavillion in which they are held in order to accommodate the exhibits, while the attendance has been unusually large. While some really fine citrus fruits are grown in the vicinity of Cloverdale, enough at any rate to show, it is not likely that this will ever become an orange growing district. The enterprise of the people here, however, is deserving of commendation, and if these annual citrus fairs do nothing more for Cloverdale they cause her to be talked about while without them no one would ever hear of her.

SHORTAGE OF CODLING MOTH WORMS

The Horticultural Commission, or at least that branch of it having charge of the breeding of beneficial insects, is having a great deal of trouble in getting sufficient codling moth worms to breed the parasite of that pest on. It would seem as though with the abundance of this pest in the apple ripening season, that there should be no difficulty in getting all the worms required to feed the parasites in unlimited quantities, yet despite frequent and frantic appeals to the apple-growers and the apple sections, not enough have been secured to keep the stock up to the required standard, and as a consequence the parasites have not bred out in such quantities as they otherwise would have done. Apple growers should communicate with the San Francisco branch of the Horticultural Commission, and if they can supply worms or put that office in the way of getting them they should do so in their own interest and that of the State.

SINALOA
THE WEALTH-SEEKER'S GOAL

Sinaloa, Mexico, has all the element and advantages that have made California famous. Profit yielding lands at prices within the reach for almost everybody. Railroad and maritime activity; great mineral and timber wealth-state is "alive" with opportunities. Write or call for information.

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WASHINGTON NAVEL TREES
TRUE TO NAME
ALLEN DODD · SHORB, CAL.

BALFOUR, GUTHRIE & CO.
IMPORTERS OF
THOMAS PHOSPHATE SODA
AND
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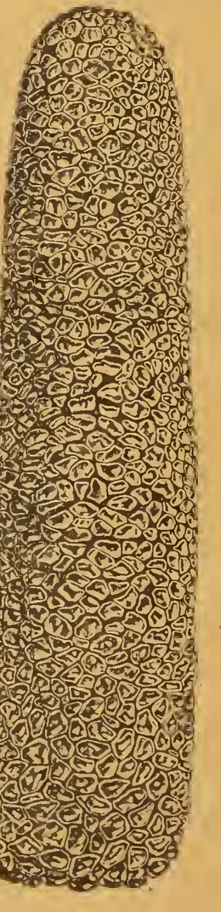
SAN FRANCISCO FRESNO LOS ANGELES
WRITE FOR PAMPHLET AND PRICES

Seed Corn

We have just received our carload of Seed Corn from our Nebraska grower, consisting of the following named varieties:


Country Gentlemen

Field Corn

King of the Earliest / **Pride of the North** Very popular here on account of earliness.

Reid's Yellow Dent. The universal prize-winner.

Improved Leaming / **Early Mastedon** well-known favorites because of large yield.

Sanford White Flint is a White King Philip.

Minnesota King is a Yellow Hickory King.

White Cap Yellow Dent / **Red Cob Ensilage** Best for ensilage.

Wisconsin White Dent / **Champion White Pearl** / **Iowa Silver Mine** the best varieties for large white corn.

Sweet Corn

Oregon Evergreen. The earliest large Sweet Corn, and the best market gardener's money maker that grows.

White Evergreen
Stowell's Evergreen
Country Gentlemen
Early Minnesota
Early Crosby
Early Mammoth

All well known.

Black Mexican. The sweetest Sweet Corn of all.

Write for prices in quantity. All Sweet Corn **10c per lb.**, postage 10c extra.

Call and select your Seed Corn.

Reid's Yellow Dent

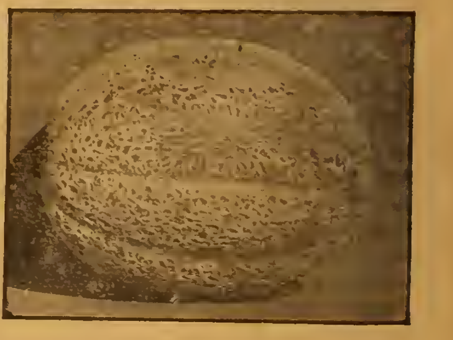
MUSK MELONS

The Sandoval Pineapple
[See Cut]

Is the greatest money maker for the market gardener. For two years the large, early Muskmelons brought to the market by Mr. Sandoval have been the envy of all the other growers. Its oval shape, heavy netting and excellent flavor recommends it to the consumer and to the shipper. Because of its ready sale all growers will want some seed of this variety.

The J. & M. Ideal

Is the best muskmelon for the family garden.



Other Varieties Specially Recommended:

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Casabas—HYBRID (the largest). WINTER (the latest). SUMMER (the best).

Photographs of each with descriptive matter is given in our Catalogue on Pages 31, 32, 33. Be sure to send for it.

JOHNSON & MUSSER SEED CO.
113 NORTH MAIN ST. LOS ANGELES, CAL.

With the Citrus Growers

BY J. W. MILLS

TRANSPLANTING OLD ORANGE TREES.

We have had inquiries from persons who wanted to move some old orange trees from one lot to another but were afraid of losing the trees.

There is not much danger of this, as the orange tree is one of the most persistent trees to grow that we know of. It has a grip on life that rivals the proverbial cat. With care that the roots do not become dry and a good supply of fertilizer, preferably stable manure, placed a foot or two beyond the severed roots at the time of transplanting and there is little danger of losing the tree. It is best to move a ball of earth with the tree. Wet the soil around the tree before moving to make the dirt stick and allow the tree and soil to become slightly dry before watering, then keep it evenly but not excessively wet By allowing the tree to become slightly dry, it will take up the water more rapidly than if kept saturated all the time. It is advisable to remove part of the top, but it is not necessary to cut off enough to disfigure the tree. Cut to some lateral that assumes the general direction desired and do not cut so as to leave a stub.

TREATMENT FOR LARGE SEEDLINGS THAT CROWD.

Most of the old seedling orange groves that remain today, were planted when sixteen to twenty feet was thought to be the proper distance apart for the trees. Crowding has forced the growth up and the trees are in such cases, bearing the most of the fruit on the tops. The side branches being crowded, shuts out the light and prevents their bearing. The only thing left is to thin out the trees or cut them back. We have seen crowded seedlings produce good crops for awhile by making liberal applications of stable manure, but grafting over all or part to other varieties [illegible] most cases been resorted to. Good results have been obtained by budding over half of the trees to Washington Navels or Valencias. By budding every other diagonal row, there will be a seedling with a budded tree on four sides of it, thus giving it room for light which means more fruit. By this method the remaining seedling trees will have a chance to develop strong healthy growth on all sides and that will mean better bearing qualities. In two or three years the budded trees will be producing paying crops.

When it is desired to re-invigorate the growth of old seedlings that have come to a standstill, a severe cutting back of the entire top to such an extent that it will have to form a new one. will without doubt give it the best and quickest returns. When it is known that cutting back to a mere stump and inserting an artificial top will give a healthy and vigorous top in one or two years, it is reasonable that if the same style of pruning is done and the suckers left to form the top, a new top will be produced in less time than a budded top will give.

See page 32, Bulletin 138, of the Agricultural Department of the State University.

THE HARDY ORANGE.

For the last three or four years all readers of horticulture journals have frequently met with articles under the above caption. I find such an article in the Cultivator of February 23rd, accredited to "Prof. B. T. Galloway, in Youth's Companion." The reports on and about this or these hybrid oranges have become a sort of bugaboo to many timid souls engaged in citrus culture. In the production of a hardy orange, in commercial quantities, they see destructive competition with the present varieties of citrus fruits that will render our groves profitless. Perhaps a few points of information as to the actual status of this hybrid orange as I saw it on its experimental grounds in Florida, a little over a year ago may quiet unnecesary fears in regard to this fruit.

I saw, handled and tasted these varieties for there seemed to be much variation among the fruits of the many trees on the five or more acres which comprised the experimental grove. From my own observation and the judgment of a very wise and experienced nurseryman and grower of citrus fruits, I believe it will be many a year before there will be any marketable fruit in commercial quantity, from the normal development of any of the species or varieties, which I saw on the trees at Glen St. Mary. There were wide variations in the trees themselves, with the single exception of being exceedingly thorny. Citrus growers in Florida years ago found an insuperable objection to the King orange because of the many and large thorns which ruined so much of the fruit, and made gathering a hardship. The King trees are not a circumstance to the multiplied thorns of the hybrids I saw. The fruit had wide variations in size, color and texture of skin. The sizes ran from those of navels to those of small Tangerines—the latter being in the minority. The colors ranged from light lemon to red orange. The skin was in most cases decidedly coarse and even rugose. The flavor was a combination of an indescribable sharp, sour, commingled with the bitterness of an unripe grape frut crossed with unadulterated sulphate of quinine. I think they would make a good "ade" if one were wealthly enough to buy the amount of sugar necessary to make the "ade" palatable. I am satisfied it will be many a day before "ade" made from such hybrid citrus fruits as I tasted will become "a habit." It may be that some genius will develop an edible orange that can be grown in the north temperate zone, but I cannot see any immediate prospect of such a fruit developing from the present status of the citrus hybrids as I saw them except after countless experiments extending over a long interval of time. Whatever will result will be developed, per gradum and even so, the resultant fruit, in all probability will not be a fruit that in any wise can supplant our present delicious oranges, and that royal fruit, the pomelo. Florida citrus culturists have been hoping to obtain a seedless tangerine. The process of evolving a seedless variety from those citrus hybrids, which I sectioned, will be a tedious one, if their abundance of seeds is any indication. I never saw a mandarin or tangerine so packed with seeds as were those hybrids of the Citrus trifoliata and Çitrus Aurantium. The citrus growers of California have no danger to their prosperous industry threatening them from any "hardy orange" which I have seen, or of which I have heard.—C. J. K. Jones.

Smooth, Thin-Skinned, Solid, Juicy

ARMOUR'S BLOOD BONE AND SINEW FERTILIZERS

oranges can be raised as easily as coarse, puffy fruit. The first step is the judicious selection of fertilizers.

The Goods Behind The Shield

enable you to avoid the necessity of experimenting with fertilizers. Their reliability has been demonstrated, both in the laboratory and the orchard.

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CITRUS SEED BED STOCK
F. H DISBROW NURSERIES
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VALENCIA LATE

And all the leading varieties of Orange, Lemon and Marsh's Seedless Grape Fruit Trees for sale. Are principally two years from bud and very fine. Can furnish from my nurseries at Glendora, Riverside or Redlands, as desired Address

Redlands Nurseries, E. I. Martin, Prop., Redlands, Cal.

Citrus Trees
—All the Standard Varieties—
Citrus Seed Bed Stock
B. C. Benner Nurseries - San Dimas, Cal.

Citrus Trees
The Philippi Nurseries
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CITRUS TREES

20,000 late Valencia and Navel Orange, Eureka lemon and Seedless grapefruit 1, 2 and 3-year buds. All stock first-class in every respect.

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Valencia Late

And all leading varieties of orange and lemon trees, and Marsh's seedless grapefruit. Trees one and two years old. Extra fine and thrifty and no scale. Plenty of fibre roots.

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Omburt Nurseries
Glendora-Azusa Pumping Plant,
One Mile North of San Dimas

15,000 Fine Trees three years from seed next spring. No clubs—fine fibrous roots; just the tree to take hold of a new home.

Valencia, Na-Valencia, Improved Navel, Washington Navel Oranges and Nectar Pomelo.

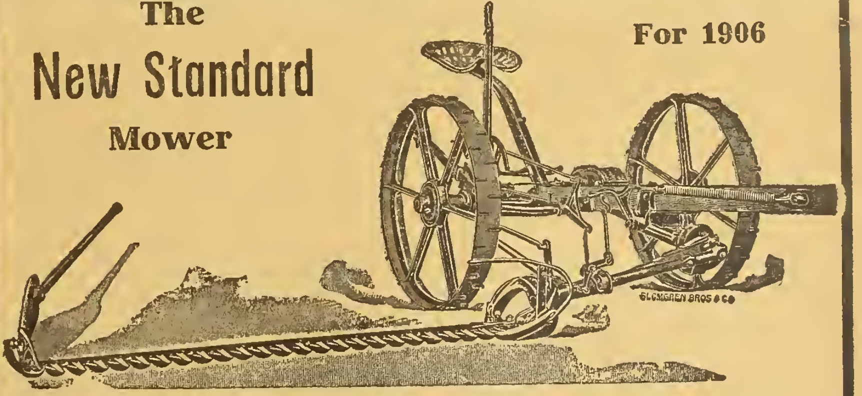
Not touched by the frost.

A. P. Griffith, Azusa, Cal.

10 per cent gross on every car is being saved by growers using the new patent Cyclone Car Cooler (Famous Intermittent Vacuum Method). Address today Chas. F. Edson, Manager Citrus Cooling Company, 950 West 20th Street, Los Angeles, Cal.

The New Standard Mower

For 1906



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ORANGE TREES
Oldest Established Citrus Nursery in California, at Alhambra, Los Angeles County

Late Valencia and Washington Navels, Lisbon and Eureka Lemons. Guaranteed true to name. No better trees in this State. Lowest market price. Three-year buds, four-year roots. Horticultural Commissioner's certificate. Order early, as good trees are scarce. Inspection invited.

E. G. Wood, Owner, at Nursery or Room 732 Huntington Building, Los Angeles, Cal.

Orange Seed Bed Stock

I have some 50,000 fine seed bed stock for sale. These plants are good color and very thrifty. Absolutely clean and healthy in every way. I will make them caliper 3-16 of an inch and up to ⅜ or ½ inch. Owing to the large size of the plants the packing will necessarily bring the price above the ordinary price of common sized plants, but they will be sold cheap, and if you intend setting it will pay you to see this stock.

J. M. Baker - - - Glendora, Cal.

The Ornamental Garden

BY ERNEST BRAUNTON, LOS ANGELES, CAL.

NAMING TREES

The increased interest in forests and forest trees which is a sign of the times has, among other things, led many city and town officials to seek to make known the names of trees growing in streets and parks. Not only are such trees in very many cases without marks of identification, but in not a few cases they have been labeled with incorrect names. The Forest Service has devised plans by which its co-operation may be secured in correctly identifying the public trees of any community which may care to call upon it.

It is remarkable how little uniformity there is in the use of tree names. Even scientific names, which are, of course, always more exact than the common names, are in many cases unsettled, but common names are often used almost at random. In different parts of the country the same species may be popularly known under very different names, and on the other hand, the same name is often used in different localities for altogether different trees.

In the effort to assist toward uniformity of usage in scientific names of forest trees, and also lessen the chaos in the use of common names, the Forest Service has already published "A Check List of the Forest Trees of the United States." This serves as a guide when once a tree has been identified by the botanist. But the first requisite is that the identification should be correct. It is here that difficulty is often met with. For this reason the Forest Service now offers its technical knowledge to city authorities.

There are two ways in which assistance may be given. Where the work is on a large scale, a representative of the Service will visit the town or city and identify the tree by examination on the spot. In most cases, however, identification by correspondence will prove entirely adequate. This will require merely that specimens of the trees be sent to the Forest Service, together with a rough sample plat showing their location, the plat and specimen being numbered to correspond.

For such identification a full set of specimens, illustrating mature foliage, and, if possible, specimens of the flowers and of the fruit (as the botanist calls the seeds) should be sent. Fruit specimens are very essential, but flowers may be omitted if they cannot be readily secured. Two or three specimens of branches in leaf, 10 to 12 inches long, taken from different parts of the crown, so as to exhibit all of the leaf forms common to the species, will answer for the foliage. One or two specimens of the foliage, flowers and fruit may be placed between sheets of ordinary newspaper or blotting paper about 12 by 16 inches in size. Thirty to fifty specimens and sheets may thus be piled one on top of another, and the whole bundle placed between two stiff pieces of mill board, pasteboard, or thin picture backing, a little larger than the sheets of paper carrying the specimens. The package must then be well tied and wrapped, when it may be sent by mail if under 4 pounds in weight. If before sending, the specimens are changed to dry sheets of paper once in twenty-four hours, keeping them constantly under a weight of from 40 to 50 pounds, they can be thoroughly dried within two or three weeks, when they will not be so heavy and will still be in excellent condition for identification.

Suggestions as to labels and their use are also made by the Service when requested. ,

While the Cultivator is only too pleased to reprint the above government press bulletin, we wish to impress our readers with the fact that we are willing and anxious to serve our readers in the same capacity in regard to California grown plants. Send in material as noted above except that it may be bundled in to us "in any old shape," and we will identify your trees.

THE LOMBARDY POPLAR

Trees of very unusual or striking character, as the Lombardy and Bolle poplars, must, likewise, be used with the greatetst caution, and, above all, their formality and strangeness should not be enforced by planting them in rows, in rural places.

The poplars are examples of trees which should be used only for secondary or incidental effects in landscape gardening, and never to construct the body or main features of the planting. Cheap trees produce cheap effects.

The Lombardy poplar may be used to advantage now and then in a group of trees to add spirit and vigor; but it should rarely be seen as an isolated specimen. The tree is used indiscriminately, because it grows rapidly in all situations and because its oddity pleases many people. It is so much abused that its legitimate value is obscured.

But the tree can oftetn be used to good effect as one factor in a group of trees, where its spire-like shape, towering above the surrounding foliage, may lend a spirited charm to the landscape. It combines well in such groups if it stands in visual nearness to chimneys or other tall formal objects. Then it gives a sort of architectual finish and spirit to a group of trees; but the effect is generally lessened if not altogether spoiled, if more than one Lombardy is in view. One or two specimens may often be used to give vigor to heavy plantations about low buildings, and the effect is generally best if they are seen beyond or at the rear of the building.

PLANTS HAVE EVERY SENSE BUT HEARING.

Dr. Henry S. Conrad of the botanical department of the Johns Hopkins University, while he does not accept in toto the theory of Dr. G. Haberlandt of the University of Gantz that in the stems of plants and in the leaves there are organs that resemble the eyes of animals and that through these, plants perceive the light, is convinced that in some form plants have all the senses of animals except that of hearing. He says: "We have never been able to discover any way in which they are susceptible to sound but in seeing, feeling and tasting they are developed." Dr. Conrad has been for some time making studies in this line. In one laboratory work was being done upon the power of plants to see. There were placed in a window a number of plants of the bean family. Those plants which were in the glare of the sun had the edges of the leaves turned upward toward the sun, so as to escape too great an amount of sunlight. Those that were in the shade had their leaves turned back close to the stem.

CIVIC UGLINESS

One of the things that the people of our large cities need to have impressed upon them is that beauty is an asset and that ugliness is a liability, and that the movement in behalf of municipal improvement that is making such headway in various parts of the country has back of it something more than an aesthetic impulse. It is based upon a recognition of the fact that the people are entitled to beautiful and wholesome surroundings as a right and not as a privilege, and that no more beneficial investment of public resources can be made than to build a city where beauty shall be the common heritage of all who dwell therein.

Sycamore Grove Nurseries

We do Landscaping in all its branches, but also carry a full line of Ornamentals and Fruit Trees. Several different varieties of Acacias and Eucalypti. Send for our prices.

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Tree Protectors

75c per 100. $5 per 1000.

As valuable in summer against sun-scald, hot winds, etc., as they are in winter against cold and rabbits. Recommended by all leading orchardists and horticultural societies.

Send for samples and testimonials. Do not wait till rabbits and mice ruin your trees. Write us today. Wholesale Nursery Catalogue now ready Write for copy. Agents wanted everywhere.

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That's just what Salzer is doing—distributing among planters everywhere countless bushels of his hardy, Northern Grown Pedigree Seeds at one-half their real value. Take advantage of this unusual offer by sending *to-day* for a free copy of the Book of

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and getting your year's seeds before the supply is exhausted. Cabbage, Beets, Radish, Onions, Corn, Beans, Tomatoes, also Salzer's famous farm seeds, such as Oats, Speltz, Barley, Potatoes, Timothy, Clover, Wheat, etc.,—all of them the cream of last season's wonderful growth on our seed farms.

LUSCIOUS RADISHES

Everybody loves a tender, juicy radish! And we want everybody to have them! Send this notice to-day and receive free Bargain Seed Book and sufficient Radish seed to keep you in luscious radishes all summer long! Remit 4c and we add package of Cosmos, the most fashionable, serviceable, beautiful annual flower.

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and are prepared to sell their seeds in any quantity, whole-sale or retail. Headquarters for ***Onion*** seed and all kinds of vegetable seed

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In the Vegetable Garden

BY ERNEST BRAUNTON

FORCING RHUBARB.

A paper entitled "Forcing Rhubarb in the Dark." was presented by W. R. Lazenby. Rhubarb roots grown from seed planted early in the spring are pulled out the following fall and allowed to freeze. The roots are then put in beds in the cellar and covered from two to three inches deep with dirt and kept in total darkness. With a temperature of 70 degrees, F., marketing the crop can begin within 20 days and cuttings can be made in about four weeks. At a temperature of 55 degrees, about 30 days are required before the first cutting can be made. Drying the roots was found to have about the same effect as freezing. Either drying or freezing serves the same purpose as a long rest, which is otherwise required, and the growth is more vigorous. When thus grown in darkness the leaf blade is greatly reduced; the green color is wholly absent; the texture is more crisp and delicate, due to a lessened development of woody fiber; the skin is much thinner than when grown in light; the water content is increased six to ten per cent.; and the flavor generally improved. The first two or three cuttings give the finest stalks. Two crops can be grown in the same space during the winter. By double cropping $35.55 worth of stalks was sold from an area of 185 square feet.—American Florist.

ONION CULTURE.

There are many people who fail to secure good results in onion culture, because they do not give the proper attention to the land before planting. There is no crop for which there needs to be made more careful preparation than the onion. The natural home of the onion is a loamy soil, with a plentiful supply of humus, and therefore, retentive of moisture. The beaver-dam soils of Oregon, and the black loams of California, are nearly ideal soils for this crop. After these soils have been devoted to the growing of this crop for a number of years, they are hardly ever sufficiently well supplied with potash and phosphoric acid, the mineral plant foods, although they have an excess of organic matter. With a more liberal supply of the mineral foods than nature furnishes in these soils, the crop is usually very materially increased. The crop is generally a very profitable one to those who rationally combine their peculiar soil condition with the application of mineral plant foods. One of the best combinations for this crop is muriate of potash, 400 lbs., dissolved bone, 500 lbs., fine ground bone, or Thomas slag, 100 lbs. This fertilizer should be well mixed with loam to secure an even distribution, and applied evenly over the land. Stable manure is not generally looked upon with favor by onion growers, because it introduces to the land such a variety of weed seeds, and further, it is assentially a nitrogenous fertilizer, while the mineral fertilizers are the ones generally required upon these dark soils. Whatever the fertilizer applied, the onion grower must keep in mind the old adage that "tillage is manure." During dry seasons, at least one inch of loose soil should be on the ground as a mulch to conserve the moisture and a mulch of three inches is far preferable.

While the dark soils as indicated are the most sought out for onion growing, often success is had upon some of the lighter colored rich soils. On these soils, however, the application of nitrate of soda at the rate of 50 lbs. per acre should be sown broadcast at the time the sets are placed, and the application repeated two or three times during the growing season. The other material, phosphoric acid and potash, should be applied when the soil is prepared, and should be well worked into the soil.

When the onions fail to produce satisfactorily, it is a good plan to seed the area to some leguminous crop, and supplement it with the mineral foods, potash and phosphoric acid, in order to increase the nitrogen of the soil upon which the crop draws quite heavily. This practice is preferable to the constant use of nitrate of soda to secure the nitrogen, because the nitrogen is supplied to the soil at a less cost, and at the same time the soil is kept in better physical condition.—Geo. Wright.

VALUE OF THE GARDEN.

Farmers can never have ideal homes without the fruit garden. It teaches the lesson of intensified farming and results in better tillage, larger crops, better stock and improved methods in every way. Good gardens and poor farms never kept company long. The growing of berries for family use is easily done. The growing of berries on a large scale and selling them requires considerable skill and a special business tact. Only those who have good location, good market and a taste for the business should attempt it. Many small farmers so situated are making a success by commencing moderately and increasing acreage from season to season as experience warrants. Berries should be grown by owners of all village homes and acreage property in city and village may be profitably used for that purpose. The market gardener selling his own products can often make an acre or two in berries very profitable.

AGRICULTURE IN SCHOOLS.

In our efforts to teach agriculture in the schools teachers will choose the wise course by selecting certain grand divisions of the subject for discussion and school study this season to the practical exclusion all others. Field crops is a topic which calls aloud to some teachers and may best be first taught by those who feel an especial interest in this topic. To other teachers fruits may appeal with such peculiar force as to make this the most convenient point to begin in taking up a new line of school thought. The soil, birds and wild animals, our domestic cattle, or farm poultry and bees afford each in its turn most excellent beginning points. Let not the teacher be deluded into the scatteration method of teaching "all about agriculture" in one year.

TREELESS FARMS.

There are too many farms without the beautifying and sheltering influence of a grove more or less extended. Go to the farm where trees exist and compare comfort there with a treeless homestead and there will be no doubt as to the form of resolution the contrast will inspire.

GARDEN PLANS.

Plan for the garden now; order your seed from some good reliable seedsman, and do it now while you have time to think about it. Don't put it off until spring opens and your spring work is all on in a pile, and you haven't time to give a moment's thought to your garden. and don't forget to include at least a few packages of flowers.

RECLAMATION BY IRRIGATION

Vast tracts of arid land that were formerly considered valueless may be so reclaimed by irrigation that they become veritable garden spots of great fertility. As the population of the country increases, and available agricultural lands are taken up for settlement and improvement, the problem of irrigation steadily gains in importance.

First Woman Suffragist—Did you cut the ticket or vote it straight?

Second Woman Suffragist (absently)—Straight! I cut it on the bias.—New York Press.

WATERMELON SEED
I still have about forty pounds left of that extra Chilian melon seed, grown and selected by myself, which I will sell for 75c per pound by mail, 60c pound for 5 pounds or over by express.
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The very best Brandywine stock at low prices for sale by the grower,
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$1.25 per 100, $8 per 1000
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Brandywine Strawberry Plants for sale, Kellogg's strain. No better nor thriftier plants grown. Clean of all disease; at bottom prices.
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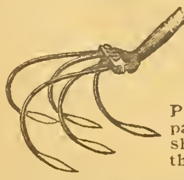

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You know we could not do business on such liberal terms if our seeds were not as represented. They are guaranteed true to name and the seed grown. Remember, we require no money in advance. Order today, using coupon below, and you will say it was one of the most profitable dollars you ever spent.

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Box 27, Glendale, Cal.

Please send me prepaid one each of your vegetable flower collection. If they grow satisfactorily, I will pay you $1.00 on June 1st, 1906. If not satisfactory, it is understood that I am to be at no expense whatever.
[Write plainly.]
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Address ....
State ....

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Arbor Day Celebrations—The Cultivator is glad to read the numerous notices of Arbor Day doings throughout the state. They speak more than words or pen of the growing interest the occasion is creating in the minds of our people. At Oxnard, for example, a carload of street trees was distributed and set out on the streets. At various other points tree planting was engaged in with appropriate holiday exercises of the George Washington character. This is encouraging. The Cultivator has for years advocated the necessity of planting shade and ornamental trees on the streets and on public grounds, like school, church and courthouse grounds, not only for the beauty they create, but the moisture they conserve.

The more trees we plant in California the more rain fall we shall get., and the greater the rain fall the less we shall be compelled to irrigate. So the question of tree-planting becomes an economic one after all, for if by beautifying our streets we at the same time add to our water supply we have added to our property value and gained in pocket by conserving moisture and the expense of irrigating.

Why don't individuals, municipalities and corporations make Arbor Day a time for wholesale street and country ornamentation? They are doing this in the middle states and they are making money thereby. George Washington would a great deal rather have a million or two shade trees planted on his birthday with a thought for him as the last shovelful is thrown about the roots of the tree than to have banquets given in his honor where wine makes fools of men, and they in turn make a fool of the father of his country by the maudlin praise they bestow upon his memory. Chambers of Commerce and Boards of Trade all over this state would really do something commendable if they would spend the money they eat and drink at Washington's birthday banquets, in purchasing trees for parks and streets and have them planted right so they will grow and become useful ornaments to the country. Towns like Los Angeles and San Francisco ought to set the smaller towns an example in this particular, instead of the towns being the promoters of the pleasant and attractive project and giving these cities pointers on how best to celebrate the 22nd of February. The Cultivator hopes next year that every local improvement club through out the state, no matter what its name is, will make it a point to have some public exercise of an appropriate nature on Washington's Birthday and with it plant a few hundred ornamental trees on the streets and on the school grounds. Here is work of practical worth for the State Promotion Committee to give attention.

* * *

Orange Case Reversed—The orange growers have sustained a serious reverse at the hands of the Supreme Court of the United States, which on the 24th handed down an opinion reversing the decision of the Circuit Court of the United States for the Southern District of California in the Citrus fruit case, appealed by the railroads of this State against the Interstate Commerce Commission. The points before the Court were the right of shippers to route their fruit over lines independently of the railway companies, and as we remember, also, asking that the rate of $1.25 per 100 lbs be reduced, the same being decreed exorbitant.

The decision denies the shippers the right to route their own consignments and permits the railroad companies to route the same as they please.

In the text of the opinion as reported the court supports the contentions of the railway companies that no harm could come to shippers of fruit should the companies be permitted to select the routes over which the eastern shipments were made after crossing the Missouri River.

The court is of the opinion that no time is lost, and the strong opinion is also expressed that should the initial carrier be permitted to do the through routing, rebates will be entirely done away with, as under those circumstances shippers could in no way receive rebates, not knowing over which eastern road the fruit is to be routed.

No mention is made in the opinion in reference to the rate of $1.25 per 100 lbs on fruit destined to points east of the Missouri River, which the shippers claim, is exorbitant, on the grounds that the railway companies are in better position to give lower rates, and also that the price of fruit has greatly decreased.

The outcome of this decision is greatly feared by the fruit growers of this State who contend that it will result in a return to the conditions which obtained previous to the decree of Judge Wellborn entered about three years ago. At that time the slow service and indifferent handling of fruit wrought vast damage to growers. Fruit delayed in transit rotted in the cars, some of it was even frozen before it reached its destination. Under the decision rendered it is claimed fruit men are at the mercy of the railroads, in every particular and this of itself is feared will result in the demoralization of the citrus industry in this State.

What the result will actually be, however, depends on the anxiety of the transportation companies for the business. If they wish to encourage citrus shipments they can do so, by giving growers quick service and by following the rule of sending to markets which desire them the kind of fruit demanded. If, also, the carrying lines conclude to continue the present arrangement and not avail themselves of the powers granted in the decision, they can save the fruit industry of California, otherwise the future of citrus growers is in grave doubt.

* * *

Progress of the Rate Bill—We are all interested and we may say, vitally, in the passage by Congress of a just and equitable railroad rate law. The Hepburn bill which is now in the Senate, having passed the House, we are told already has one hundred amendments to be offered to it, all of which means that an effort is to be made by that body to procrastinate action until the session is closed. This of course, will be the end of the matter for this term.

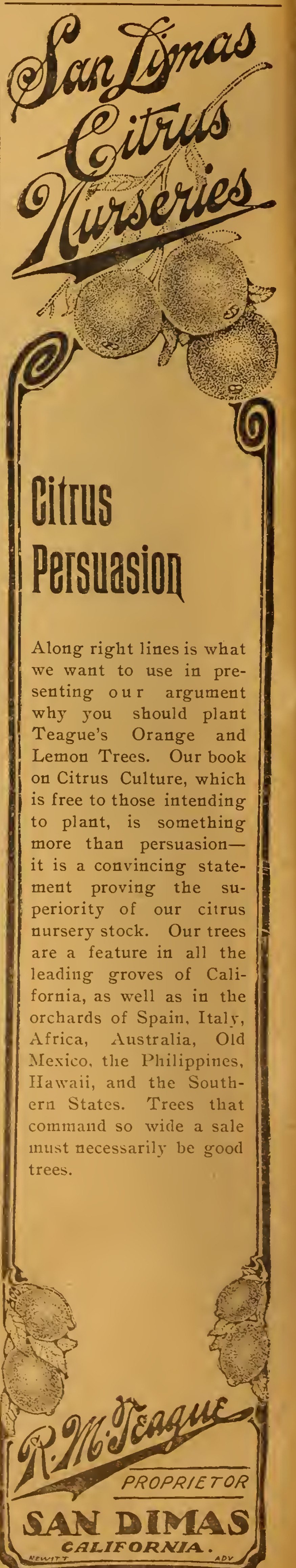
It will be unfortunate if the Senate shall kill this measure, and yet, that is to be expected, for, from the first it has been seen that that body is opposed to any regulation of railroad rates because of the affiliation of some of its leading members with great corporations of different characters. The regulation of railroad rates might lead to the regulation of other interests like the Standard Oil, the Beef Trust, the Coal Trust, and the like, hence the danger Senators see, who are identified with leading commercial industries, in the making of any railroad legislation other than that which exists.

We think it is a mistake on the part of the Senate to defeat any just measure which the country demands at this time. The public is asking but justice, and when these railroad managers deny the right of the government to protect the public against the injury and wrong of an extortionate rate when one is found to exist, they provoke alarm, and invite public condemnation.

The fact remains that these corporations and the people are all interested alike in paceful relations. The farmer and the merchant, the banker and the mechanic, are always prosperous together; and so with those who own the great properties of the country. They cannot prosper unless the rest of the country prospers.

At a celebration of Nebraskans on Lincoln's birthday the Attorney-General of Nebraska discussed this proposition aptly and practically. When he declared, "There ought to be no strife between the people on the one hand and the owners of the great commercial properties of the country on the other. They ought to work together, to live together, and be happy together; but if the owners of these properties refuse to submit to the creation by law of a commission such as the President suggests, a tribunal to hear complaints with power to give relief is just and right, the hope for peace is ended. The responsibility for trouble should it come, will rest with those corporations who deny the right of the government to protect its own people. In this fight there is no neutral ground. Every private citizen and every public officer must stand up and be counted either for or against the power of the government to deal with all men alike. He must answer the roll call in one army or the other."

This doctrine here laid down is the one upon which this government is founded: the doctrine of the greatest good to the greatest number. It was embodied in the proposition of equal rights—the principle that Lincoln stood for—the principle which Roosevelt stands for, and the principle the people will stand for until it is written unalterably and eternally in the statute books of the Republic.



Citrus
Persuasion

Along right lines is what we want to use in presenting our argument why you should plant Teague's Orange and Lemon Trees. Our book on Citrus Culture, which is free to those intending to plant, is something more than persuasion—it is a convincing statement proving the superiority of our citrus nursery stock. Our trees are a feature in all the leading groves of California, as well as in the orchards of Spain, Italy, Africa, Australia, Old Mexico, the Philippines, Hawaii, and the Southern States. Trees that command so wide a sale must necessarily be good trees.

NEWS OF COUNTRY LIFE IN THE GOLDEN WEST

HORTICULTURE.

George Reeves says something resembling the Codling moth is affecting the cling peach in this section.—Pomona Times.

A. W. Young has resigned as Horticultural Commissioner of San Joaquin County, and R. C. Tubbs has been appointed in his place.

The Supervisors of King's County have reappointed James A. Hill, H. W. Brown, and J. E. Tilton as Horticultural Commissioners of their county.

The Limoneira Company near Santa Paula has begun putting fruit in its packing house for this season and has over 30 carloads in the packing house now.

A petition has been presented to the Board of Supervisors of San Benito County, urging the appointment of a Board of Horticultural Commissioners.

G. R. Holbrook has resigned as a member of the San Bernardino county Board of Commissioners , and L. S. Dyar, of Ontario has been appointed to fill the vacancy so created.

Lester Green of Vorden, Sacramento county, has been appointed on the County Board of Horticultural Commissioners, to fill the place made vacant by the death of Senator Johnston.

With a prospect for 5000 or 6000 car loads less citrus fruit this year than last there is every reason to believe that the growers and packers of the fruit will receive fully $3,000,000 more than last season.

Shipments of trees from an Oregon nursery are arriving at Marysville by way of Sacramento. These trees are sent to Sacramento in car lots, and reshipped to other points apparently without inspection. ,

Actual returns from all citrus fruit sold this year have averaged to date $650 a car, against $500 a car for all of last year and $400 a car the preceding year. These figures are for fruit on the cars in California.

The Citrus Fruit Association this week paid to its members $8500 on the January pool for navel oranges. This is at the rate of over 1 1-2 cents per pound for all grades shipped during the month.—Ontario Record.

At the last meeting of the Riverside Horticultural Commissioners George Vankirk was appointed inspector at Corona, and N. H. Hargraves was appointed inscpector at Banning, the former inspectors at both places having resigned.

Our orange growers, say the Escondid Times are selling quite a lot of their fruit now for cash delivered at the packing houses. The prevailing price is one cent per pound, but some extra fancy fruit is bringing one and one-half cents. The above price pays well for growing oranges.

AGRICULTURE.

Twenty tracts of land of five acres each in the Willamette valley section or Oregon are now being seeded with California alfalfa.

On the 22nd a carload of trees were received by the town of Oxnard to be planted on all the streets of the city. Work has already been done on putting them in place.

The townsite of Coachella, Riverside county, in the heart of the section where the melons grow, is reported to have been sold to a syndicate of Los Angeles men.

The Los Alamitos sugar factory reports contracts already signed for over 6000 acres, and beet seed for 3000 acres. In some localities beets are up and nearly ready for the thinners.

In and about Lodi the growers have made big sums of money from Tokay grapes. These figures are accurately given, but there is no reason why Tokay grapes should always bring enormous prices.—Exeter Sun.

"Judge Gibbs," says the San Fernando Press, "has decided that the Los Angeles river runs through the valley in two stories." If that is so why didn't he partition off one story of the river to Los Angeles, and the other to the farmers of the valley?

For a number of years, Oregon dairymen and farmers have felt the need of a crop that would provide green feed for dairy cows during the eight or ten weeks of dry summer weather. So they have turned to alfalfa for relief and have asked the assistance of the railroad people.

A correspondent writing from the Pomona valley district of the fruit and grain situation says: Orange picking, which was interrupted by the rains is being rushed now, and the packers are busy. The grain fields are looking fine, with promise of a big yield at harvest time. Plowing and cultivating is being pushed industriously, according to present indications the beet crops this year will break the record. Considerable corn and potatoes are being planted. The present outlook indicates a banner year all along the line for the orchardist and farmer.

LIVE STOCK.

The Chino Champion says corn soaked whiskey is causing the downfall of many ducks about Lakeview. San Bernardino sportsmen are responsible for the scheme.

It is estimate that the amount of live stock daily killed in Los Angeles and vicinity is 400 beeves, 1200 hogs, and 1500 sheep. This amounts to 12,000 beeves, 36,000 hogs and 45,000 sheep monthly.

Angora goats are going into Napa County in large numbers. The Napa Journal tells of seven carloads of Angora goats, something over one thousand head, hich arrived in Napa Sunday from Imperial, Southern California. They were consigned to the California Angora Land Company.

The California Promotion Committee reports a synopsis of the State Dairy Bureau's complication of dairy statistics for California for the year ending October 1, 1905. The production for the year totals 41,961,047 pounds, an increase of 17 per cent. over the previous year.

Orange county boasts of live stock in the following ratio: beef cattle 150; stock cattle 5560; dairy cows—graded, 1620; common cows 3790; mules 460; calves 2580; swine 2015; horses—thoroughbred 5; standard bred, 21; common 3815; colts 1510; sheep, common 34,200; lambs 8200.

The dairy cattle show which was in full blast at Chicago last week was attended by about 30 Californians, some of whom are leading dairymen of the Sate and in search of the best dairy cows they can find to import.

The Imperial Creamery, much admired by the dairymen because of its completeness has been sold to W. R. Davis of Los Angeles.

MISCELLANEOUS.

The city council of Modesto has levied a license tax on cats.

Last year Oregon, Washington and Idaho shipped 4,000,000,000 feet of lumber.

The schools of Eureka have been closed by the ravages of scarlet fever.

Los Angeles is the tenth city in the country in the matter of building improvements for January.

Some 400 men are at work broad guaging the narrow guage system from Santa Cruz to Alameda.

A public ownership club has been organized in Porterville to work in conjunction with the state and national clubs.

The Visalia Board of Trade will erect a building of its own this season. That indicates progress of the right sort.

Congressman J. N. Gillette of Humboldt county announces through friends that he is an aspirant for the Republican nomination for Governor.

According to the Santa Barbara Press prospecting for oil in the Carpenteria valley will be under way in a few days. Oil men think it is a promising field.

Luther Burbank has donated a number of his rapid growing walnut trees and seeds of his famous Shasta daisies to Alameda scholars, who have selected his birthday, March 7, as Arbor Day.

The people in the eastern part of Shasta county, and particularly in the fertile Fall river section, have started a concerted movement to form a county of their own with Fall River Mills as the county seat.

It is getting so that they regard it as a dull day in Tulare county when some new town doesn't spring into existence. The latest to be recorded is the town of Lindcove, which is to be laid out twelve miles east of Visalia.

Some Illinois people who have located in Hanford during the past year or so have been sending violets from here back to their friends in the Sucker State, and they have landed four shipments with great success.—Hanford Sentinel.

A dispatch from Marysville says: It is announced that the Butte county Canal will be extended this year for a distance of three miles, which will bring it to the south line of Sutter county. A spillway will be run to the Feather River through which to release the surplus water from the ditch. A largely increased acreage will thus be brought under irrigation.

Southern California is on the verge of another era of railroad building. San Diego, says the Riverside Press, is trying to induce the Salt Lake to build from Riverside to that city; the Western Pacific has declared its purpose to build from San Francisco to the southern part of the state and the very latest is that the Hill interests are planning a line from San Pedro to Los Angeles and thence on up the coast.

The F. Gilman Taylor Seed Co., of Glendale Cal,. is out with a fine illustrated catalogue, all of said illustrations being from photographs taken for the express purpose. The day of "stock cuts" for seed and plant catalogues is nearly past for customers soon tire of seeing the same old illustrations, year after year, and in half the catalogues in the land. We believe this new catalogue will prove a strong drawing card for all interested in farm, flower and vegetable seeds. Send for one.

LINER ADVERTISING

Advertisements in Liner Column will be charged 1¼ cents per word. No advertisement taken for less than 25 cents. Eight words to a line.

LINERS

FOR SALE—PHENOMENAL BERRY Plant, any quantity. For terms apply E. Thompson, P. O. Box 630, Fresno, Cal.

FOR SALE—INDIAN RUNNER DUCKS. $6 per doz., eight to ten weeks old. C. H. Goodacre, Compton, Cal.

MAMMOTH PEKIN DUCK EGGS, 13 FOR 50c. Mrs. G. F. Williams, Cyprus Ave,, near Sixth St., Burbank. Cal.

BLUE ANDALUSIAN EGGS FOR HATCHING, from three noted strains, $2.50 and $3. Incubator lots $7.50 to $15.00 per 100. Mrs. T. R. Griffith, 3111 Walton avenue, Los Angeles.

BRAWLEY NURSERY, ERICKSON & HEINY, Props., Brawley, Cal. For sale. 70,000 malaga cuttings, guaranteed true to name and free of disease: also ornamental palms and shade trees, and all varieties of imported and home grown citrus and deciduous trees. Write for price.

ELDORADO CONSOLIDATED MINES. Forty-one claims, situated north of Indio, Riverside Co., Cal. Very promising. I have examined tnem and know of nothing beatter for investment in the State The company is well organized and is vighrously pushing the work of development. Rich ore and much of it. A limited number of shares are offered at most reasonable figures. As geologist and mine examiner. I have had large experience in mining matters. It will pay to look into. Address for particulars, DR. STEPHEN BOWERS, Secretary and Treasurer. 1135 Dewey ave., Los Angeles.

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60-Acre Stock and Alfalfa Ranch

FOR SALE

20 miles from Los Angeles, abundant artesian water, fenced and cross-fenced. house, barn and outbuildings. Price $8,000 with stock, $7,000 without. One-half cash, balance time.

Gleaves Bros., 436 Hellman Bldg., Los Angeles, Cal.

BRANDYWINE STRAWBERRY PLANTS

FOR SALE

30.000 Extra Fine Kellogg Strain Brandywine Strawberry Plants that were reserved for party who now orders them sold.

E. E. LEECH, IRWINDALE, CAL.

SUPERIOR ACETYLENE GENERATORS

ADD COMFORT AND VALUE

Give you the most perfect light and heat. No smoke nor soot. Our Generators Guaranteed. Write us for full particulars.

SUPERIOR LIGHT AND HEAT CO.

151-53 North Clarence St. Los Angeles

Grafted Walnut Trees

LARGE GENERAL NURSERY STOCK

IT WILL PAY YOU TO GET OUR PRICE LIST BEFORE BUYING

Orange County Nurseries, Fullerton, Cal. Phone Red 151

BEST TREE WASH GREENBANK 98% Powdered Caustic Soda and Pure Potash

Copy of Analysis of competitive brand labelled and sold as "Powdered 98% Caustic Soda:" Sodinm Hydrate, 75.60%; Sodium Oxid, 58.59%. Signed: I. M. CURTIS & SON, Analytical Chemists.

T. W. JACKSON & CO., 123 California Street, SAN FRANCISCO

"FERTILIZERS FOR THE LANDS SAKE" A.C.W.

FERTILIZERS

More commercial fertilizers have been used this season than ever before in the history of the business in California. Why? Many growers owing to poor prices for fruit during the past two years discontinued the use of fertilizers trying to save expense—poor judgment. This year prices rule better than at any time in the past five years. The good business man figured on this and kept his grove up with fertilizers he has the crop—he has the money in bank and his grove is in good condition to continue to produce, the other fellow's grove is "run down', and no crop and it will take two years to put in first class shape again—loss of time, loss of crop and money.

We are working overtime and have been for 30 days, but can handle your business. See our Agent in your district for the crop producing A. C. W. Fertilizers.

Agricultural Chemical Works

Phones: Home 6063; Sunset, Boyle 3. 901-907 Macy Street, Los Angeles

Prodigious Improvement in Five Months

Over a Million Dollars Are Being Expended by One Company and Its Stockholders on Lands in Kings and Tulare Counties.

Five months ago the Editor of the Cultivator paid a visit to Corcoran, the new town just platted on the A. T. & Santa Fe railroad in Kings county. There was then scarcely the semblance of a village. Only a few tents, a frame building and the foundation of a brick building marked the spot where the future Corcoran was to stand.

Today the scene is changed. With passing wonder the visitor stands upon the site where five months ago his eye could scan the landscape for many miles without seeing a farm house, over thousands of acres of land never scratched by a plow, where cattle ranged year in and year out and fattened on the succulent grasses which covered the country with velvet green and everywhere beholds startling evidence of prodigious improvement. Corcoran is an infant no longer. Industries are going in faster than the fertile mind of the projectors of the enterprise dared to hope. Permanent residents are erecting neat and substantial houses, putting out lawns, cultivating flowers, shade and ornamental trees and gathering around them the necessary conditions for attractive and useful homes.

Five months have brought Corcoran a first class hotel, conducted on modern lines with comforts and conveniences which attach only to larger towns or even to cities, a State Bank with $50,000 paid up capital, a hardware store, bakery, grocery, livery stable, lumber yard, telephone, electric lighting system and the many small shops of different character which are necesary in every town of well regulated importance. Four 2-story and two 1-story pressed brick blocks are nearing completion. The company is laying out the park with large artificial lake fronting the Bank the Hotel and Depot. This park, when completed, will be one of the most beautiful on the line of the Santa Fe. It is to be planted with tropical and native trees and ornamented with flowers and shrubbery of exclusive character. The wide and level streets are to be oiled and shade trees planted along the curbs and to conform in character to the best made surburban streets in California.

* * *

Cannery.—A cannery building is now projected, capable of employing several hundred hands, in which will be packed fruit and vegetable products of the territory, especially asparagus. This cannery will be the property of Mr. D. W. Lewis who has under cultivation at this time 640 acres of land which he is planting to asparagus and which will make one of the largest and most modern asparagus farms in the State. The fact developed, in conversation with experienced gardeners, that the country about Corcoran has nothing to fear from the asparagus rust and this fact, together with the peculiar adaptability of the soil and a climate which seems to give the necessary crispness to the stalk, will make it the Mecca for asparagus culture.

* * *

School House.—Among the buildings under way is a ten thousand dollar Moorish-Mission school house. Five months ago there were no school children to make a school house necessary. Today there are 60 in the district and the teachers are calling for more desk and seat room, thus emphazing the truth of the adage, "Education follows the plow." But this new and beautiful school house will not suffice for any length of time, for at the rate people are flocking to Corcoran, within the near future even this building will be inadequate for the needs of the community.

* * *

Creamery.—Geo. A. Smith, of Los Angeles, one of the most successful creamery operators in California, is now preparing to erect a plant of the most modern type with a capacity for caring for the product of 2000 or more cows daily. This creamery will be the making of the dairy interest around Corcoran for not less than one hundred farmers are now preparing their farms, putting thousands of acres into alfalfa and other crops, establishing pumping plants, many separators, etc., with a view of being ready this fall to begin actively the work of supplying the Corcoran Creamery.

The dairy industry of Corcoran will be its most important adjunct. It will bring ready money to the farmers, consume the products of the entire agricultural district and pour into the country a continuous stream of wealth.

It is doubtful if in all the State there are more natural advantages for the prosecution of the dairy industry than are to be found around Corcoran.

Within the Next Few Months Corcoran Will Have a Mammoth Creamery in Operation.

With from four to seven crops of alfalfa cut and stored a year: with wheat, oats and barley giving wonderful returns; with vegetables raised to perfection, it is no wonder that cows return handsome profits.

Mr. Wilde told me that they have, on the Charles place, 65 cows which net them $60 each per month, outside of the skim milk he feeds his calves and hogs and above the calves produced. He is shipping his cream to Hanford at that. When he delivers his cream at Corcoran, six miles from his dairy, his revenue will be increased very considerably.

* * *

Soil.—I have before spoken of the character of the soil about Corcoran. I am impressed, the more I study it, with its marvelous producing power. A silt loam filled with vegetable matter, just enough weight to give it body and warmth, the farmer needs only to cultivate it well to proiuce corn twelve fet high, with one irrigation to put the soil in condition for planting and another to fill the ear at tasseling.

* * *

Irrigation.—With water nine feet from the surface, in the dry season alfalfa grows and matures, is cut and stored and merrily grows on, year in and year out, with less moisture needed than in any other country we ever saw. Verily it is the farmer's paradise.

Stockmen and Dairymen in the Tulare Lake District are Arranging to Build Silos This Season for Their Cattle. They Will Be Filled With Corn Silage.

King's county has the best, the cheapest and the most reliable irrigation system known to this continent.

* * *

Every Farm Can Have Its Own Water System.—The people, and not great corporations, own the water and the expense of irrigation is confined to the simple charge of keeping up the ditches, with their headgates, drops and flumes, in repair, and distributing the water.

John Lachenmyer, an extensive and successful alfalfa raiser, has a pumping well which produces over 150 miners inches, capable of taking care of 400 acres so he says. So it is with many other farmers. Of course the artesian wells are the wonders. Think of wells that gush a stream of water three or four inches over a six or ten inch casing and run day and night. Yet we saw several doing this and before the close of the season 16 artesian wells will be sunk within a radius of five square miles. On the lands of the Security Land and Loan Company are now 36 flowing wells, 14 pumping wells, and 9 rigs constantly at work developing more and securing in every instance abundant supplies of excellent water, and the work has only begun.

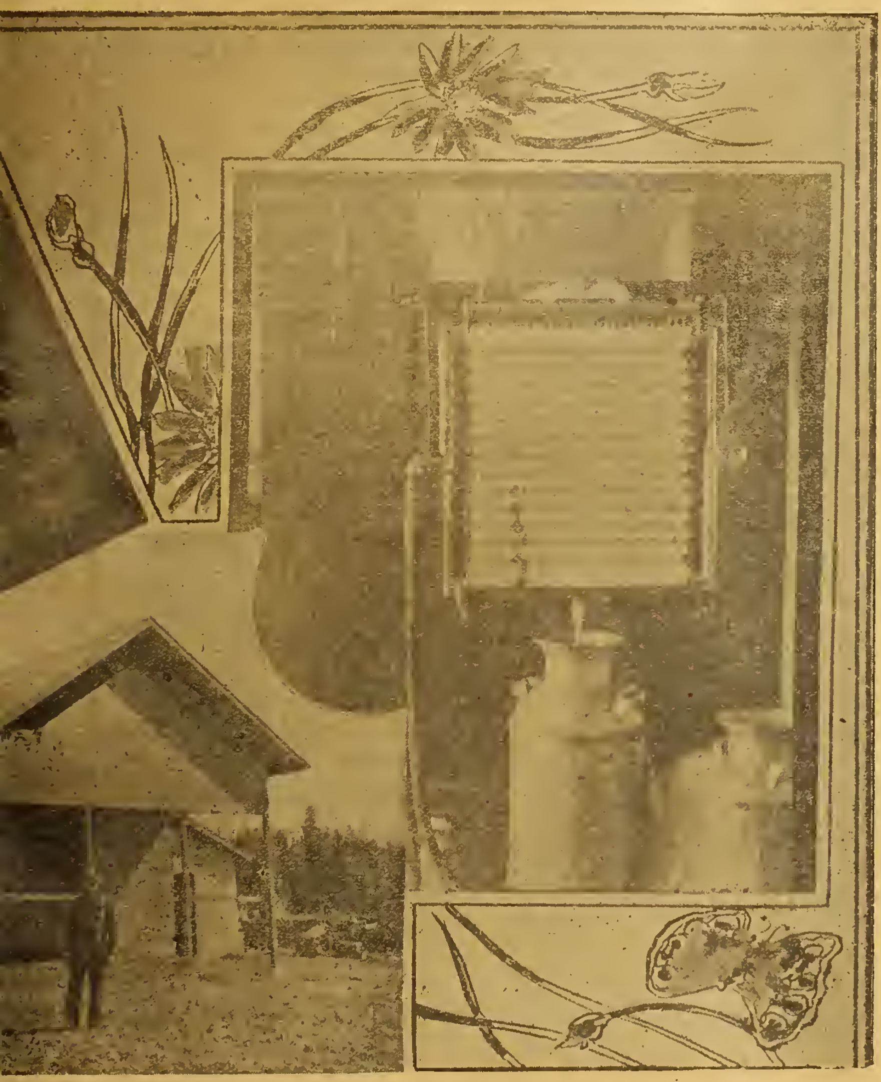
Without irrigation the dry plains of Kings county, in their wild state, produce alfilaria (Filaree) and other native grasses sufficient to graze, in ordinary seasons, not to exceed one head of stock to two acres of land per year. Properly irrigated these same plains exceed in fertility the famed delta of the Nile, as witness the raisin vineyards and orchards of deciduous fruits, not only the largest in area but the greatest in volume of production in the world. An acre of alfalfa, properly irrigated, will produce in one year from five to ten tons of hay worth from $6 to $10 per ton. and in addition thereto will pasture four head of cows for six months. Many of her irrigated peach orchards annually produce twelve tons per acre of green fruit, and her prune, pear and apricot, nectarine, plum and almond orchards in like proportion.

Thus it will be seen how important irrigation is to the soil of this country.

Her sources of water supply, in addition to artesian and pumping wells, are chiefly the two great rivers, the Kings and the Kaweah, having their sources in the higher Sierras, eastward from sixty to seventy-five miles, and they never fail to bring down to the plains from the glaciers, chasms and wooded slopes of those great mountains, each year, an abundant supply of irrigation water to meet all the needs of Kings county farmers. They fill his ditches and keep them full the year round, so that his orchards and vineyards may be wet at the most effective time and his grain and pasture lands are kept moist and productive by seepage without flooding.

* * *

The Stockman's Paradise.—I think the future of the Corcoran district will be famous for its dairy, hog and cattle productions. It is peculiarly adapted to growing and finishing stock and hogs for the market. A. P. Denny, of Angiola told me that he sold a carload of Shorthorn steers last week at 6 cents, at his farm. These steers weighed 1300 pounds and never were fed a pound of grain. What would the middle West stockman think of sending his cattle to market without finishing them on grain? He would indignantly declare such proceeding unheard of, yet the farmers in the Corcoran country are getting rich from stock they raise which is fattened on alfalfa at a cost not to exceed ten dollars a head. This phenomenal fact and also the farther one that lands are selling at such low figures, is inducing farmers from the East to locate in this valley. They are coming in large numbers and before the close of this year many thousand acres will be covered with fine young cattle imported into the country. From experience with Hereford cattle I venture the opinion that they would prove the stock for this region. Their quick maturity, readiness to fatten on grass that many other breeds would only subsist on, give them advantages of peculiar worth to a country like the Tulare Lake region.



A Dairy Plant. Kings County, Around Corcoran, Has Many Such.

However we presume other classes of stock would do proportionately well and, if so, the stock men ought to be satisfied for we doubt if the same favorable conditions for the cattle industry obtain anywhere else in the State as are found here.

One of the coming requisites of the dairy industry is the silo and I was pleased to hear several farmers with whom I talked aver that they would follow their irrigation plants with modern silos. We present in this article a picture of a silo, the counter part of which a dairyman near Corcoran proposes to erect this fall. He expects to fill it with corn to be prepared for silage to tide over any possible emergency.

* * *

Wheat Yield.—Phenominal as has been the output of cattle, hogs and dairy products from the Tulare Lake region, greater even has been the showing made in wheat. From a sowing of about 180,000 acres in 1905 a large portion harvested 60 bushels per acre. This year the acreage has been materially increased and the prospect for a bountiful return of the harvest as shown from the grain in the field has never been surpassed. It is estimated that over 250,000 acres are being sown to wheat in this section this season.

What is true of the wheat crop is also true of barley. I saw barley on D. W. Lewis' farm which stands ten inches in the stalk and a better growing I have never seen for grain sown less than fifteen weeks ago.

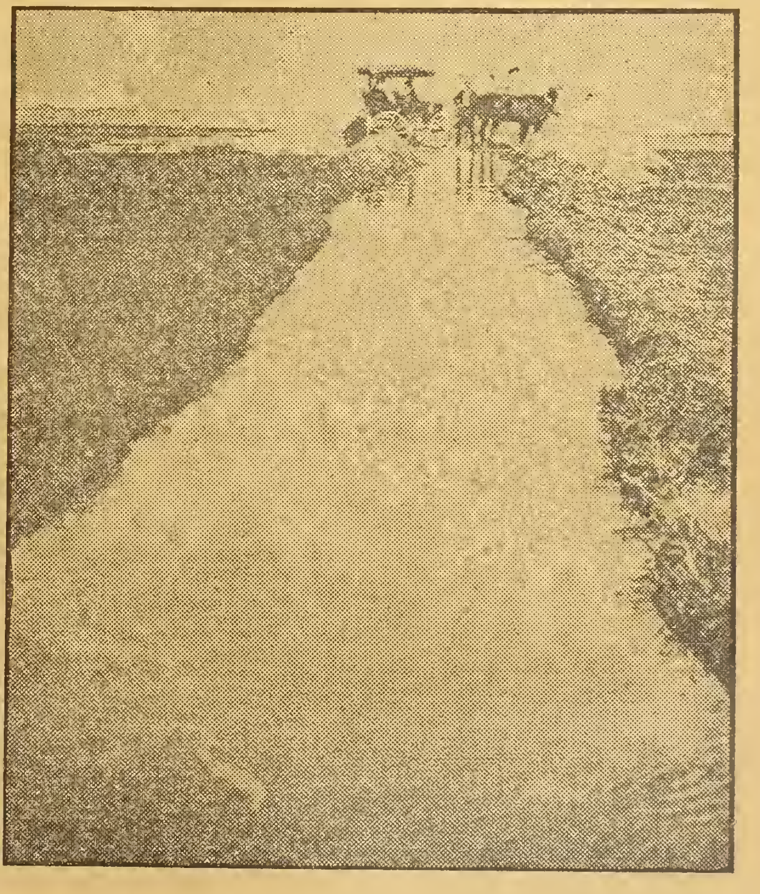
* * *

Fruit Industry.—The purchaser of every 40 acres in the Corcoran district binds himself to include in his regulation improvements at least ten acres of fruit trees, berries, ornamental trees and shrubbery. The great variety of fruits possible to be grown in Kings county renders it an easy proposition to figure the relative returns to be received from grapes, prunes, apricots, berries of all kinds, apples and figs. The coming of a cannery to Corcoran will furnish a near market for all corn and vegetables the country can produce. It is a well-known fact that California cannot begin to furnish the canned goods which the cities and towns demand, hence we send to the East for what is lacking in this particular. Corcoran will add another industry in its cannery to supply the needs of the State and incidentally add to the wealth of the fruit growers of the region known as the Tulare Lake district.

We cannot close this somewhat meager resume of the advancement made in Corcoran and its tributary country, without mention of the heavy investors in the enterprise. They are among the leading business men of Los Angeles, Hollywood, and Hanford. The directors of the company are W. C. Patterson, Gen. H. G. Otis Arthur Letts, J. B. Brokaw, George Hanna, Alan Gardner, Robert Hale, J. Jepsen, A. J. Pickrell, L. S. Chittenden, A. F. Flory, P. B. Chase, M. R. King, O. J. Wigdal and H. J. Whitley.

The president, financial manager and a large owner in the enterprise is H. J. Whitley, well known through his large developments in the Middle West and more recently through his extensive operations at Hollywood. It is he who is guiding this development and who, supported by his able assistants, aims to make here a model temperance farmers community.

All deeds to lots and adjoining acreage contain clauses prohibiting the opening of saloons or bars or the sale of liquors, thus giving protection to the home from the saloon evil. It is their intention to make of Corcoran and its tributary country, a region to be sought after by Easterners who are looking for a fine climate with a soil unsurpassed in richness, where water is abundant and returns from agriculture, horticulture, stock and dairy, will make the industrious farmer rich.



Canal Supplied by One Artesian Well on Property of Security Land and Loan Company.

Live Stock and the Dairy

BY MRS. MINNA E. SHERMAN, FRESNO, CAL.

Editor Cultivator: I was interested in your account of the value of the silo. We have started in a small way with the family cow and horse, and 1500 chickens. One of the greatest wants we have is green food for all. Now if a silo will help us get it during the dry season we will be grateful indeed. We will plant a small patch of alfalfa, raise mangels, kale and I think some fodder corn. Now how do you build a silo, and how do you pack it?

It will not pay to build a silo for less than ten cows, as four or five inches are necesary to be removed daily from the top to prevent waste by moulding. The various brands of alfalfa meal will answer to give protein and for succulency roots must be depended on largely, with pumpkins to help out. Cutting alfalfa hay and letting it remain over night well wetted down to heat and swell will also help out the feeding. In feeding a cow the milk will not be contaminated if cabbage or turnips are fed, if it is before milking time, long eough to let the animal breathe off the aromatic gas, so most people say feed directly after milking. The droppings of the cow that occur during milking should be covered with earth at once, the milk will be all right.

Editor Cultivator—I have a cow that has been ailing and losing flesh since she last calved about six months ago, second calf. She seemed to have had no trouble in calving but since then I have noticed that she is breathing with an effort and a rattling sound in her throat. I find she has a swelling in her throat. which feels hard and round and also some smaller soft lumps underneath jaw. Appetite is good, feed her on hay and bran also has run of field, no cough, age nearly four years. If you have a remedy for above I would greatly appreciate it. P. J. K., Santa Rose.

The obstructions in the throat will fully account for the labored breathing. If the lumps are soft they may contain pus, and if so should be opened. If they are on the jaw are usually actinomycosis or lumpy jaw. The following is helpful: Tincture of Iodine 2 drahms, Oleum Tiglii, 1-2 an ounce, Alcohol 2 ounces. Mix and apply with a brush to lumps, label poison and keep it away from the children. It should blister the skin and act as a counter irritant. In lumpy jaw the bone is affected on the inside and the enlargement presses against the windpipe.

Editor Cultivator—I have a cow that is troubled with her stomach sometimes she throws her cud out of her mouth. I was told to give her saltpetre and sulphur. Do you think it would be good and what would be the dose or do you know of anything else that would be better. E. R. Santa Rose.

As to the general condition of this cow, if very thin or if the trouble is of long standing I do not know. However, the first thing to do is to examine her mouth and tongue for fox tail or for barley beards. If there is no difficulty there, begin by giving the cow at night a drench of one pound of Epsom salt with a couple tablespoonfuls of ground ginger. After this has worked off, give her daily the following divided into two doses: Sulphate of Iron, 2 drahm, Powdered Nux Vomica, 1 drahm, Powdered Gentian 1 ounce.

This may be mixed with bran or given as a drench, continuing for one week, watch the bowels, if they act too freely reduce the medicine, feed the cow green stuff and bran, oil cake in moderate quantities. not too much of anything at one time. If after a week the cow is better stop medicine and feed her carefully. This trouble is usually thought to arise from feeding too much dry, harsh food.

RECORD OF GOLDSETTIE OF LA PALMA

Editor Cultivator—Herewith find records of Goldsettie of La Palma 181126. Sire Golden of Biltmore 60 082; Dame Wintsetter's Regina 141-188. C. W. Leffingwell Jr. Owner, Whittier Cal. It does me great pleasure to report a young cow like this as this heifer is. so far as test goes, (first month of test,) the best record of any young cow of same age, two years, two months at commencement of test, in America. There may be others . Let us hear from them. These tests are based upon authenticated butter fat estimates and not from seven day butter tests—the real thing, just what the cow produces no more no less.

Goldsettie gave Jan. 21, 1906, morning 15.5 lbs milk testing 5.9, .914 lb fat; night, 12.8 lbs milk testing 5.8, .742 lb fat; Jan. 22nd, morning, 15.4 lbs milk testing 5.00, .770 lbs fat; night, 16.00 lbs milk testing 5.5, .880 lbs fat. Total milk 59.7 lbs; total fat 3.306 lbs. Average percentage fat 5.53. For the first month of her year's test commencing Dec. 26, 1905 to Jan. 25, 1006 inclusive she gave 893 lbs 7 oz. of milk. To this is applied the average per cent of fat 5.53 equal to 49.405 lbs fat; butter 83 per cent, equals 59.524 lbs.

Her dam, Winksetter Regina has just finished her one year authenticated butter fat estimate, which is 8,874 lbs 13 oz of milk; 406.6 oz butter fat equivalent to 58.623 lbs butter 83 per cent butter fat.

Veterinary

BY DR. W. I. OLIVER,
318 East Second St., Los Angeles

Editor Cultivator—Will you please give me your advice in the columns of the Cultivator in a case of distemper with one of my horses. Last July the mare took distemper, the gland on her left side below the ear began to swell, also a lump on her throat. A local veterinary lanced both places and there was much discharge from the sores. The animal ran down in flesh and I doctored with her until about December first without working her much. Since that time she has gained and is looking fair but a few weeks ago a lump gathered on the left side of her neck below the ear almost the same spot we lanced last summer, and yesterday it broke and there was plenty of pus discharging. H. C. H., Gilroy, Cal.

In writing the answers in last week's Cultivator I answered the questions as numbered. I see they were not so numbered in the paper. Consequently you could not find No. 5. Your mare was treated all right but the wounds may have healed before all the effete matter had sloughed out. Your recent attack I believe from that cause. If any enlargement remains you should apply a mild blister to the parts. Cantharides one to four of lard is good. In lancing always make a good dependent opening. You can cleanse it out better and inject a little of the following: raw linseed oil, spirits turpentine, comp. tinc. benzoin, 3 ounces of each. Shake before using.

LUMP JAW

Editor Cultivator—Please tell me what to do for my cow. A lump has grown on her jaw well back, she eats

Dr. PAXTON'S COUGH AND THROAT REMEDY. TRADE MARK

For Catarrhal Fever

Pink Eye, Distemper and all diseases Nose and Throat

Cures the sick and acts as a preventive for others, and is given on the teeth and tongue. Safe for Brood Mares and Colts and all others. $1 00 per box, ½ doz. $5.00. Sold by druggists, or sent express paid.

Paxton Veterinary Medicine Co., Box 95, Sta. C, Los Angeles, Cal

No More Blind Horses for Specific Ophthalmia, Moon Blindness & other Sore Eyes, Barry Co, Iowa City, Ia, have a sure cure

STALLION FOR SALE

As I am going out of the horse business, I will sell my *Norman-Shire Stallion* at a very reasonable price. Has imported blood on both sire and dam's side; age 7 years, color black, gentle and sure foal getter.

H. C. Auld,

Auld P. O., Riverside County, California

John Lynch Breeder of Registered Shorthorns

MILK STRAIN

P. O. Box 321 - Petaluma, Cal.

GEO. C. ROEDING, BREEDER OF HIGH-GRADE

Thoroughbred Holstein Bulls and Heifers

Thoroughbred Berkshire Boars and Sows

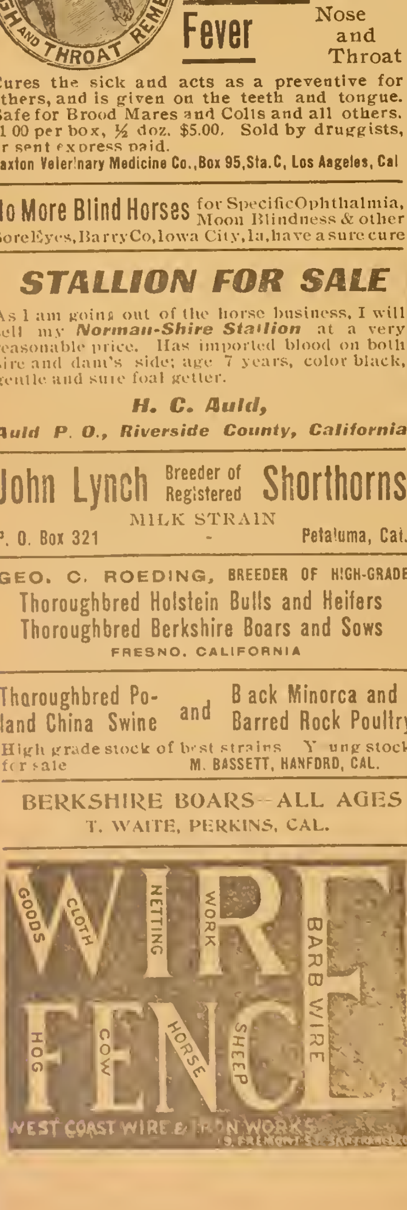
FRESNO, CALIFORNIA

Thoroughbred Poland China Swine and Black Minorca and Barred Rock Poultry

High grade stock of best strains Young stock for sale M. BASSETT, HANFORD, CAL.

BERKSHIRE BOARS—ALL AGES

T. WAITE, PERKINS, CAL.



A Big Difference

One Minute's Washing as compared to at least fifteen. Wouldn't you like to save at least fourteen minutes twice a day? **One minute** with a cloth and brush cleans the absolutely simple Sharples Dairy Tubular Cream Separator bowl shown in the upper picture. It takes fifteen minutes to half an hour with a cloth and something to dig out dents, grooves, corners and holes to clean other bowls—one of which is shown in lower picture.

Washed in 1 minute

Count the pieces — notice the difference—and you'll understand why the one who has to do the cleaning prefers the simple Sharples Tubular.

There are other advantages just as much in favor of the Tubular. Write today for catalog V-260—it tells you all about the gain, use, and choice of a separator.

The Sharples Separator Co.
West Chester, Pa.
Toronto, Can. Chicago, Ill.

Washed in 15 to 30 minutes

There are more of the **Sharples Tubular Cream Separators** in use in California than all other makes combined. Write at once to the State Agents for Catalog R. Address **Joshua Hendy Machine Works**, Separator Dept., 61-77 Fremont St., San Francisco, Cal.

Creamery Machinery and Dairy Supplies

Cream Separators
Engines and Boilers
Milk Bottle Fillers
Milk Bottle Washers
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Sanitary Equipments a specialty
Combined Churns
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J. E. MARBLE. J. E. FISHBURN

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INCORPORATED

REGISTERED JERSEYS
REGISTERED BERKSHIRE HOGS
REGISTERED HOLSTEINS
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Farms in Los Angeles and Riverside Counties Young stock for sale at all times.

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Thick Cream

SELLS FOR ONE CENT MORE PER POUND THAN THIN CREAM

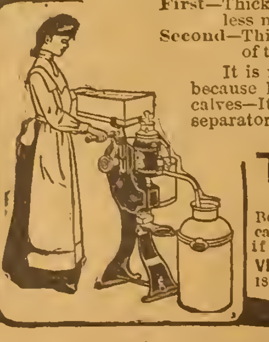
The creameries of the country have become so convinced of the increased value of thick cream over thin cream that many of them are paying one cent per pound more for cream testing 30 per cent. and over than for that testing under 30 per cent.

The reasons for this are—

First—Thick cream makes better butter because it contains less milk and therefore keeps in better condition.

Second—Thick cream is so much less in quantity that the cost of transportation is less.

It is much better for the dairyman to make thick cream because he has more skimmed milk left at home to feed calves—It then follows that dairymen should buy only such separators as can separate thick cream.



The U. S. Separators

Lead the World in this particular

Beware of the cheap and poorly constructed Separators that cannot make thick cream. They would be expensive even if furnished without cost.

VERMONT FARM MACHINE CO., Bellows Falls, Vermont.

18 centrally located distributing warehouses throughout the U.S. and Canada.

429

Prompt Delivery Assured California Customers from San Francisco Warehouse No delays. Address all letters to Bellows Falls, Vt

well, gives a little milk and will be fresh about April 10th.

The cow may have lump jaw, I fear she has. If so look back in the Cultivator for treatment which was published about a month ago. If the lump comes from barley beards or bronchos they may be cut out. Your best course is to have the cow examined at once by a veterinarian of experience.

BARLEY TESTS.

In a five years' test of barley at the Montana Experimental Farm it was found that New Zealand, a 2-rowed barley, gave uniformly good results during five years and ranked first with a yield of 82.5 bushels per acre. Berkeley a 2-rowed beardless variety, stood last in yield with an average of 46 bushels per acre, and also in weight per bushel with 51.4 lbs. Guy Mavle, a hulless variety, gave an average weight of 64.6 lbs. per bushel standing first in this regard. No. 5590 obtained from the Department gave the second largest yield, averaging 77.7 bushels, and Mandscheuri California Prolific, Italian, Manhattan, and Improved Cheyenne produced over 70 bushels for the five years.

Mr. A. P. Robinson of Riverside, who has some fine standard Wyandottes, advertises his ability to supply eggs in the Cultivator.

Advertising Column for Members

OF THE

JERSEY BREEDERS ASSOCIATION

OF SOUTHERN CALIFORNIA

Organized for the general advancement of Jersey interests, to extend knowledge of their superior merits, for the mutual benefit of members, and to increase the profitableness of one of the State's greatest industries. Breeders are requested to unite with the Association.

BULL FOR SALE

Having sold my ranch I am forced to sell Golden of Biltmore. 60082, a grandson of Golden Lad's. Golden of Biltmore is one of the best, ***if not the best*** sire on the coast, several of his daughters less than two years old selling for over $200 each. Highest bidder for next sixty days takes him.. If everything is not just as represented, I will give anyone the ***bull free of charge. I sell on merit.***

C. S. Burgess, Riverside, Cal.

Pure St. Lambert Bull

—ST. LAMBERT OF RAMONA, No. 62633,—

heads the Ramona Herd of Registered Jerseys of

Geo. W. Thomas, Riverside, Cal.

The Whiting Jersey Stock Farm Co.

Have moved their herd of Jerseys from San Bernardino, Cal., to the famous Imperial Valley, and hereafter their post office address will be Heber, San Diego Co., Cal., from which they will conduct all their business. Abundant green feed every day in the year will be of great advantage in the best development of our young stock.

Whiting Jersey Stock Farm Co., Heber, San Diego Co., Cal.

LEMONITA HERD

Leffingwell Rancho, Whittier, Cal.

Service bull "SARGENT FOX," 64833. Bred on the Island of Jersey. Sire, the great Flying Fox, that sold at auction for $7,500. Dam, Miss Sargent, reserve winner over Jersey; winner of seven first prizes and five championship cups. "One of the grandest cows the island has ever produced."

VENADERA HERD

OF REGISTERED JERSEYS

Offers for sale three richly bred heifer calves sired by Marigold's Exile King, out of good cows. Also a yearling son of the great cow Nettie Underwood, official test 10,992 lbs. milk, 668 lbs. butter in one year. For records and prices write

GUY H. MILLER, RIVERSIDE, CAL.

Jersey Mead Stock Farm

HIGH CLASS REGISTERED
JERSEYS, POPULAR
STRAINS

GEO. E. PLATT, 316 E. 8th St., Los Angeles, Cal.

Oakhurst Jerseys

Sons of imported Golden Marquis out of prize winning and tested dams. for sale.

L. Bradbury Duarte, Cal.

Kings Victor King of St. Lambert

At head of herd. Young stock for sale.

H. N. WILLIAMS COMPTON, CAL.

Profit in the Poultry Yard

BY MRS. A. BASLEY, HOLLYWOOD, CAL.

BREEDING

In our last we talked about line breeding, in-breeding and outbreeding and I tried to explain that line breeding is a very careful inbreeding or a breeding of fowls related, having more or less of the same blood. It is by very close in-breeding that all the new breeds are established and it can be done with perfect safety so long as healthy, vigorous birds are used. By line-breeding you can perfect or intensify the different qualities in your birds and you can control these qualities in so other way.

To illustrate, I had a hen hatched on Thanksgiving day(and many a time I have given thanks for her) I kept her nearly seven years. She laid 225 eggs in nine months when in her prime. She was vigorous and healthy and wishing to perpetuate her good qualities in her offspring I mated her to her son, and the following year to her grandson. Three-fourths of my prizes came from this mating. I sold her eggs at five dollars a setting. I put this high price on them because I did not want to sell and I knew there were not many who would give that price, but some did buy. One gentleman wrote me from Sacramento that he put the thirteen eggs into his incubator with a lot of Leghorn and Wyandotte eggs. Ten of "Snow Queen's eggs hatched. One chick was accidentally killed the first day, the remainder, nine grew up to be large, sturdy fowls. Although they were brought up in the brooder with Leghorns and Wyandottes which had roup and chicken pox and all the ills consequent on poor quarters and neglect only about fifteen per cent surviving. The owner wrote me that Snow Queen's offspring were so healthy and vigorous that they seemed immune to all diseases. The nine grew up, two took first prize, cock and hen and the five next won first prize pen in strong competition with Eastern birds. The owner wrote me he considers his five dollar investment paid and added that the special strong feature was the vigor and healthfulness of the birds. These were line-bred birds, having seven-eighths of Snow Queen's blood.

At the last Farmer's Institute I attended a farmer came to me, "I have some of your Snow Queen's daughters three years old. One of them laid in one hundred and ten consecutive days one hundred and five eggs." Thus showing what line breeding in the right way will do.

Every year I also very carefully outbreed in only one pen. That is I buy, sometimes at great expense, the best new blood of the country so that I might have some non-related fowls, for mating, but it was the line-bred birds that I could rely upon to give me prize winners and also those were the grand egg producers. the vigorous healthy fowls that I could depend upon to give me over two hundred eggs per year. Do you wonder that I advocate careful line-breeding?

I knew every bird on my place, I could tell you the pedigree of most of them and I knew the egg record of all of them. Their proper mating was as great a matter of concern to me as the marriage of the President's daughter and I made a success of the chicken business.

Cross breeding or out crossing is mating two fowls of distinctly different breeds. Such as mating a Plymouth Rock with a Leghorn. What would or what might be the effect of this? And would it be of any benefit?

It would very much depend upon the prepotency of the birds, the stronger one would mark the offspring most strongly. The one that is the most bred-in-line would give most strongly his or her impress on the offspring. The first cross will frequently give better layers than either side, the first cross may improve the laying qualities in fact it usually does. What will be the result of the next mating? Which parent will you follow? You cannot keep the even balance and the chances are ten to one, or a hundred to ninety-nine that the offspring will be nothing but mongrels and that in egg production they will be so poor that you will either denounce the poultry business as a delusion or you will return to the thoroughbreds for they and they only, can be depended upon to give the best results, the greatest out put of eggs and the best market fowl.

Buff and Black Orpingtons
Silver Penciled and Columbian Wyandottes

Eggs for Hatching. Stock for sale.

Mrs. C. J. Jacobs, Box 356, Monrovia, Cal.
Mountain View Poultry Yards
Home Phone 148

WILLARD POULTRY FARM, HYNES, CAL.

Mrs. F. T. Hungerford, Manager

INDIAN RUNNER DUCKS

At San Francisco show, 1905, I won 2nd and 3rd on young drake and 1st on young duck, with 3 entries. At the 1906 Los Angeles show, 1st on old drake, 1st and 2nd on young drake, 1st and 2nd on young and old duck and 1st on pen. Eggs—$1 for 13, $3 for 50, $5 for 100. Hens' eggs all ordered up to April 1st.

Fairview Poultry Yards

SILVER LACED WYANDOTTES

Two pens, both headed by prize-winning cockerels; 1st at Los Angeles and 1st at San Diego. Four prize-winning females in pens. Eggs, $1.50 per 15.

WHITE PLYMOUTH ROCKS

Special mating, pen headed by Fairview Prince, a son of the best layer in our yards, $1.50 per 15. Five pens large MATURE hens mated to vigorous Cockerels, $1 per 15 eggs; $5 per 100. Eggs from these pens specially recommended for incubator hatching.

A. E. NELSON, EL MONTE, CAL.

A POULTRY COLONY

NEAR LOS ANGELES

Is at present being formed for the purpose of mutual benefit. Situation unexcelled; plenty of good water, splendid soil and close to town. For particulars apply to

Anna L. Pinkerton

Realty Trust Company, 129 So. Broadway,
Los Angeles, Cal.

When writing advertisers mention Cultivator.

EGGS

Barred Rocks, White and Brown Leghorns, $5.00 to $6.00 per 100, $1.25 to $1.50 per 15. White Wyandottes, $7.00 to $8 00 per 100, $1.25 to $2.00 per 15. Reds, Orpingtons and White Rocks, $6 00 to $7.00 per 100, $1.25 to $1.50 per 15. Other kinds, prices on application. You can buy cheaper eggs than we sell, but are they good? Are they guaranteed? Ours are.

Sole Agents Standard Cyphers Incubators

Kloninger Bros., 838 S. Main St., Los Angeles

PER 2 BUSHEL SACK **$1.90** **PER 2 BUSHEL SACK**

BUYS THE WORLD'S FAMOUS
EGG FOOD NO. 4

MIDLAND

IF YOU WANT EGGS
YOU WILL FEED NO OTHER

Used by all the largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the **GOLD MEDAL** at the St. Louis World's Fair for greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1604.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A FILCHER, Commissioner.

And Now Comes New Reward for Merit:

Read the following telegram received from the Lewis & Clark Exposition at Portland:

"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

PETALUMA INCUBATOR CO.

Main Office and Factory, Petaluma, Cal., Box F. Los Angeles, 505 South Main Street
San Francisco Office and Salesroom, 33 Market St.

HUSKINS' WHITE WYANDOTTS

Prize winner for two years, 1905 and 1906, at L. A. Eggs for hatching from standard bred stock. $1.50 per dozen, or if you mention Cultivator, will send thirteen.
A. W. Huskins, 713 Waterloo St., or 541 South Main St., Los Angeles.

Rhode Island Reds

Record making layers; average per hen, whole flock, 180 eggs for '05. $1.25 per setting, 2 settings, $2.00; incubator lots, $6.00 per 100.
J. S. ENGLISH, R.F.D. 112, Gardena, Cal.

BRONZE TURKEYS

Hart's strain. Winners of five firsts at Los Angeles Show, '06, and always winners wherever exhibited. Write for prices.
ED. H RT, CLEMENTS. CAL.

White Plymouth Rock

Eggs from standard stock, $1.25 per setting, $6 per hundred. **Mrs. N. C. Hansen, Coachella, Riverside County, Cal.**

Fruit and Poultry Ranch For Sale

10-acre fruit and poultry ranch, fenced; 14 correls, including alfalfa, 400 deciduous fruit trees; wood for fuel; 6 room house, barn and windmill; close to railroad town. Bargain, easy terms.
J. C. Peters, Owner, Hemet, Cal.

White Plymouth Rock Poultry Ranch

Eggs for hatching from First Clas Stock $6.00 per 100. $1.50 per setting 15 eggs.
J.T DAVIS, Prop POMONA. CAL.

Brown and White Leghorns

Prize winners at L. A. Show, '06. Eggs from good laying strains. Eggs, special matings, per 15, $2.00. Incubator lots, $6.00 per 100.
Hemet Poultry Yards, Hemet, Cal.

Blue Andalusian Eggs

$1.50 and $2.00 for 15, $7.00 per 100. Free range. I raised and sold cockerel winning first prize at late L. A. poultry show. Stock. **Mrs. J. S. Duff, 3145 S. Hoover St., Los Angeles, Cal.**

Rhode Island Reds

Fine stock of cockerels and hens for sale. Eggs, $1.50 per setting.
C. E. DAVIS, REDLANDS, CAL.

White Wyandottes

Eggs from Standard-Bred Birds, $1.00 per 13.
H. A. Phelps, Highgrove, Cal.

White Wyandottes

Eggs for hatching from standard bred birds. $1.50 per 13. Hens and Pullets for sale.
A. P. Robinson, 263 Prospect St., near Park, Riverside

Shade's Rhode Island Reds

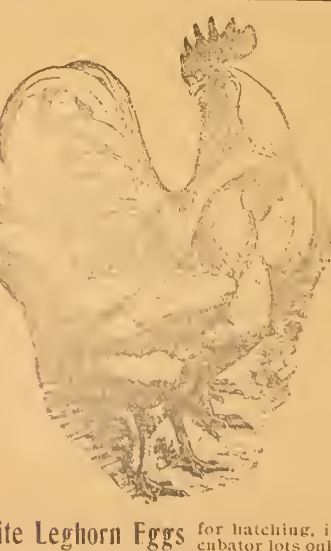
Automatic Chicken Feeders for Sale.
Shade's Rhode Island Red Farm, San Bernardino, Cal

FOR SIX YEARS

Albers' Black Minorcas

Have led in the shows every year, and they lead all breeds in egg production all the time. Eggs in large or small lots. Stock for sale Circular free.

GEO. R. ALBERS
4849 MARMION WAY LOS ANGELES, CAL.



White Leghorn Eggs for hatching, in incubator lots only, at Ten Cents a dozen over Los Angeles market quotations. Avenue Poultry Yards. Ventura, Cal.

30 DAYS TRIAL

Buy From Our Factory—Save One-Third.
PRACTICAL INCUBATORS positively the best. Hatches more and stronger chicks. 10 YEARS' GUARANTEE
Cat. free. PRACTICAL INC. CO., 720 S. 11th St. San Jose, Cal.

The cross breeding of fowls is very similar to that of cattle or horses. At one of the Farmer's Institutes a question was asked about crossing Holteins and cJrseys, the Jerseys giving very rich milk, but less in quantity than the Holsteins whose milk is not usually as rich. The reply of the Professor was that it occasionally might result in the first cross having the good qualities of both parents, but it would more frequently be found that the offspring would have the poor qualities of each strongly pronounced and then he inquired what would the next generation be? It is practically the same with fowls, unless you want to build up a new breed and will have the patience, the money and the intelligence to do so waiting always for years for the results. Keep to the Standard fowls and let some one else develop new breeds.

If I had space I could tell you of some of my experiences, both in out breeding and in cross breeding, costly and disastrous to my pocket book, but experiences which made me study the question of breeding and mating more thoroughly than anything else would have done.

Experience is a good, but expensive teacher, and her lessons are worth remembering. I learned in my own case that it is safer to breed in line unless there is some defect to be corrected than to introduce new blood of the same breed, or out-breed through a female. As a rule the fowls take the feathering, the colors, from the male, the shape and size from the mother.

DOINGS OF THE SAN DIEGO POULTRY ASSOCIATION

Editor Cultivator—I thought it would be a good idea to place before your readers the doings of our incorporated poultry association, as the plans are worth trying by poultrymen in any locality where about twenty-five members can be secured.

Our constitution reads about like this: "We have voluntarily associated ourselves together for the purpose of holding annual exhibitions of purebred poultry, poultry products and pet stock: to secure better prices for our products and lower prices for grain and poultry supplies, to buy and sell grain, foods, poultry supplies and poultry products; to establish a depot where the stockholders and others can buy or sell all articles necessary for the carrying on of the poultry business, and to maintain and carry on the same."

Individually we could not buy to any great advantage nor dispose of our surplus stock and eggs at the highest obtainable price—but where the Association through its store, orders grain, or other supplies in large quantities a bottom figure can be secured, and adding to this a small per centage to cover expenses of our depot we can then resell to our members at a discount that in the course of a year's purchases cuts a wide swath in the expense columns of our members.

We have been selling wheat to our members at $1.45 per cwt. about 40c better than retail price. We also sell to the general public at the prevailing retail prices, which is a source of income that aids to pay the expenses of maintaining our store.

Every member has his advertisement in the store, telling what breed he keeps, and what his stock and eggs can be bought for, and the poultry people are fast taking to this idea,

Standard Bred S. C. White Leghorns

EXTRA LARGE B RDS A D HE VY LAYERS. Eggs, $2 per 15; $8 per 100; $60 per 1000 from January until July only.

CAPTAIN MITCHELL SANTA BARBARA, CAL.

Author of "A Practical Poultry Plant for Southern California," $1.25 cloth binding, on sale by Calif Cultivator

Dean's Pacific is an Incubator built on scientific plans and has all the latest improvements. Every machine guaranteed. "Facts From Experience" and Catalog for the asking. Address **Dean's Place, 2509 Central Avenue, Los Angeles.**

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IS ATTAINED WITH

LOS ANGELES INCUBATORS

LEE'S LICE KILLER EGG MAKER | LARGEST POULTRY SUPPLY HOUSE IN THE U. S.

HENRY ALBERS 315 S. MAIN ST. LOS AGNELES

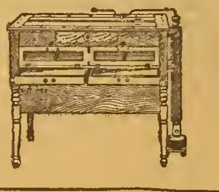
Emery's Pure Meat Meal

Don't believe all we say, but just enough to buy our Poultry Foods

Ask your nearest dealer for them and take no imitations

Emery's "B. B. & B."

THE PACIFIC GUANO & FERTILIZER CO. Successors to N.Chiondi & Co San Francisco, Cal.



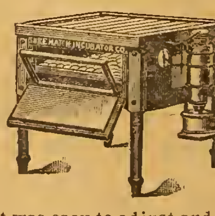
The Stockton Incubator

Is now manufactured under new management and is in every way put up as a first-class machine. Our 1906 model is a perfect working incubator, economical to run and gives a fine hatch.
Winner of silver medal at Pan-American, also medal at California State Fair. Write for circular and information.

Stockton Incubator Co.
Marshall & Barnes, Props. Stockton, Cal.

West Coast Chick Feed

Is the Best. Manufactured by West Coast Stock Food Co., 818 San Fernando St, (through to Alameda) Los Angeles


SURE HATCH INCUBATOR CO.

Sure Hatch Incubators

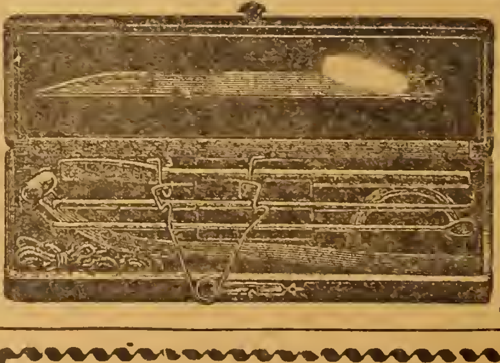
AND BROODERS

Are recommended by the U. S. Dept. of Agriculture and Dr. Richard H. Wood, America's foremost authority on poultry breeding, after trying **12 different machines,** states that the Sure Hatch is one of three only that gave satisfaction. He adds:

"Your Machine Hatched the Surest of the Lot.

It was easy to adjust and easy to regulate. Your lamp is good, reservoir simple and compact and All in Sight." Freight prepaid and catalogue free.

Anna P. Williams, Agent, 819-821 South Main Street, Los Angeles



Caponizing Set

Double Your Profits by Caponizing.

Complete with instructions, $2.50, Postpaid

STOCKMEN'S SUPPLY CO.

FRESNO, CALIFORNIA

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MARDEN EGG FARM

HYNES, CALIFORNIA

Breeders of S. C. White Leghorns Exclusively

Fine Feathers alone do not make the profitable hen. Our fowls have the reputation of being ***extra large, handsome*** and ***extra heavy layers.*** Last season, our eggs averaged over 95 per cent. fertile. ***Remember***—In getting eggs from us, you do not get them from the general runs. We have but one grade of eggs to sell for hatching and those are from our breeding pen composed of only the choicest fowls, selected from hundreds that are ***bred to lay.*** Hens that approach the ***200 egg record.***

Price of Eggs—$1.50 per 15, $5 per 100. ***Send for Illustrated Catalogue. Address,***

LEO. W. MARDEN, Manager

RHODE ISLAND REDS

Fine large stock, heavy layers, best of broilers. Eggs, $1.50 per setting.

J. D. Setzer, Northrup and Pedro Sts., San Jose, Cal.

BARRED ROCKS, WHITE MINORCAS, INDIAN RUNNER DUCKS AND WHITE HOLLAND TURKEYS

Prize winning birds at Central California Fair, where 7 firsts were won in '05.

JOE McDONALD, R. F. D. 2, HANFORD, CAL.

LINDGREN BROS. KINGSBURG, CAL. McPHERSON, KANSAS

BUFF LEGHORNS BARRED ROCKS

Prize-winners at Chicago, St. Louis, San Francisco and majority of prizes at Portland on Buffs. Choice Cockerels and Pullets for sale.

White Rocks Exclusively

Limited number of young birds. Eggs from prize winning, producing strain, $2 per 15 or $5 for special mating. Write for circular.

Mrs. Rhoda E Durfee, 1110 W. 1st St., Santa Ana, Cal.

Banning Poultry Yards

White Leghorn and Barred Rock eggs for sale, $1.00 for 15, $4.00 per 100. Fertility guaranteed. Correspondence solicited.

Morris Bros., Props., Banning, Cal.

THOROUGHBRED YOUNG CHICKS

White Leghorns, 10c.
White Ply. Rocks, 12½c.

Wm. A. GREEN, Box 401, ANAHEIM, CAL.

Barred Plymouth Rocks

Standard Bred, Hawkin's Strain, $1.00 to $1.50 per setting of 14. Young chicks after March 1st

Mrs. Albert Miller,
1913 Ricardo St. Sta. A, Los Angeles, Cal.

Blue Andalusians

At Los Angeles, 1906, our strain in a class of 68 Andalusians with 16 birds won more firsts than all our competitors combined. Eggs, $2.50 and $3.00 per 14.

Blue Ridge Poultry Yards, 128 Avenue 32, Los Angeles

EGGS FOR HATCHING

from a heavy-laying strain of

SINGLE COMB WHITE LEGHORNS

I guarantee 100% fertile. Write for prices.

Golden State Poultry Yards, Lordsburg, Cal.
T. E. Mills, Prop. Home Phone 1720

100 White Leghorn Hens and Pullets For Sale

A Bargain. High-grade birds, large, healthy and vigorous, all laying and will pay you $1 per day profit right now. Only offered because we need the room. $1.25 each in any quantity. Write at once. **Eggs for Hatching.** High quality, low prices. First prize winners at Los Angeles and San Diego.

M. I. Hannahs, Sunnyside, Cal.

SONOMA-AMERICAN INCUBATOR

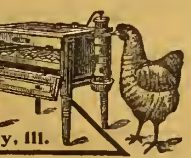
Send for large circular fully describing these machines.

Sonoma-American Incubator Co., - Petaluma, Cal.

$12.80 For 200 Egg INCUBATOR

Perfect in construction and action. Hatches every fertile egg. Write for catalog to-day.

GEO. H. STAHL, Quincy, Ill.



BARRED ROCKS
EXCLUSIVELY

Send for 16-page 1905 Catalogue

H. R. CAMPBELL
Box O PETALUMA, CAL.

Mountain View Poultry Ranch

S. C. White Leghorns—Heavy layers. Eggs, $1.50 per 15, $5.00 per 100.

Indian Runner Ducks Males for sale. Eggs, $1.00 per 13, $3.00 per 0, $5.00 per 100.

Mrs. J. L. Updyke - Fullerton, Cal.
Successor to Jacob Kreger

Rose Comb White Leghorns
High Grade Buff Orpingtons

Varian's Poultry Yards

P. O. Box 666. Home Telephone 1886
895 N. Catalina Ave., PASADENA, CAL.

White and Silver-Laced Wyandottes
White Plymouth Rocks
White Leghorns and Black Minorcas

Plymouth Rock and Wyandotte eggs, $2.00 per setting, $8.00 per hundred.

Leghorn and Minorca eggs, $1.50 per setting, $6.00 per 100.

I have been breeding thoroughbred poultry for over 20 years and have as fine stock of these varieties as there is on the Pacific Coast.

I also hatch and can supply little chicks from a dozen to a thousand from the above varieties delivered anywhere within 72 hours of San Jose. Prices on application.

J. S. Smith, Box 526, San Jose, Cal.
YARDS—CORNER MOORE AND CHAPMAN STS.

and many sales follow that net the store ten per cent. About a dozen coops are always on hand filled with fowls of various breeds to sell, also eggs for hatching in any quantities. Our members meet there to discuss poultry matters, the novice stops in for advice, and we are fast establishing a central point where the fancier and rancher can rest, talk poultry, write letters, become acquainted with others and make his purchases, etc. We have not yet arranged to receive and market all the eggs from our ranch members for general table use, but expect to get around to that soon.

Our receipts are showing a gradual increase right along and the experimental period is now passed and the movement a success. Harry A. McIntire, Sec'y.

BREEDING AND FEEDING FOR EGGS

Mr. M. Ward, of Gosford, whose Orpington pullets won "The Daily Telegraph's" first laying competition, in Australia, writes on the subject of breeding for eggs, in that journal: "I have devoted some years to the study of breeding utility birds, and believe that the Orpington stands out first in this respect, being hardy as chicks, quick growers, making excellent table birds at from four to six months old, and up to 12 months or longer in the case of hens.

"I have always found the best layers to be short-legged birds, fairly long in back, full round breast, tight in feather, having neat heads, a trifle small (a big-headed hen is never a good layer) and quick and sprightly in all their movements; always on the alert, as it were. Great care should be taken in selecting the cock bird, as he is half the pen, and if he is of a poor laying strain, the young cock will, in most cases, take after him. I have had some difficulty in selecting cock birds to mate with my hens, which by the way, I always breed myself, as it is difficult to know the laying qualities of another breeder's stock birds. However, I have been very successful in this matter by buying only from reliable breeders whose word I could take.

To breed good layers, if one has good stock to start with, it is absolutely necessary to feed well from the time the chicks are hatched, as no matter how good the stock birds are, if the chicks get starved or stunted in their growth, they will never make good layers. At the same time, forcing must not be attempted, or the pullets will begin to lay too early, and that should be avoided. I have had Orpington pullets laying at four and a half months old, but I do not like them to lay till they are at least six months old, by which time they are fairly well grown and developed. I find that those that lay very young go off laying after a little while, sometimes moulting quite out of season, and then going months before they begin again.

"The feed I give my chicks at first is oatmeal and shell grit, very fine. After two days finely-ground corn mixed with the oatmeal, then some rice once or twice a day, plenty of nice green feed twice a day, (lettuce, rape, or cabbage), besides a grass run, always keeping plenty of shell grit and clean, cool water before them. When they are nine or ten weeks old it is best to separate the pullets from the cockerels, and feed them three times a day, always giving them the best feed that can be bought. At ten weeks old they get middlings and bran in the morning, two parts middlings to one of bran, if the middlings is coarse, but if it is fine, floury middlings then I mix quite half bran, always using the finest bran I can get. The corn I use is the hard kind, called, Flint corn, or large ninety-day. It is also best to get milling wheat, as it is really cheaper than the chick-wheat, even if one has to pay 6 or 8 cents a bushel more for it. The feed I give at ten weeks to four months old is mash in the morning, wheat and green stuff at midday, corn in the evening. I cull out all I can at four months old, keeping only what I consider the best.

"I find it best to run my fowls in small lots, having proved that five pens of fowls, with ten birds in each pen will do very much better than one pen of fifty having the same space as the five pens. After the birds are four months old I drop the midday feed of wheat, and give it to them at night alternately with corn until the hot weather sets in, when I discontinue corn altogether. I never feed oats or barley, as I do not like them.

"In selecting pullets to breed from, I generally take note of those I think most suitable for my purpose, and pen them with a cockerel, noting which ones lay the most eggs, and eventually breeding from them. I have never used a trap nest. but can quite understand how useful they are to those who have time to attend to them. Any man who is constantly among his fowls can easily note which hens lay the most eggs, and after a very short time, if he takes particular notice of the eggs, he will see that almost every hen lays a different kind of egg, and by doing this he can tell which of his hens lays the most eggs.

BLUE ANDALUSIANS

Exclusively the best general purpose fowl for the Pacific Coast. Eggs, $2 for 15: incubator lots at special prices. Cockerels for sale.

C. E. CHITTICK.
124 Avenue 34
Los Angeles, Cal.

Young Half-Wild Turkey Gobblers For Sale

Turkey Eggs from pure bred Mammoth Bronze, $4 per 13

Mrs. N. Frank Morse - Fullerton, Cal.

White Plymouth Rocks

First class stock. Eggs, $1.00 per 13, $2.00 per 30. Indian Runner Ducks—$1.00 per 15, $2.00 per 33. A few ducks for sale. **H. S. Thompson, 125 W. Avenue 54, Los Angeles, Cal.**

White Wyandotte Eggs

For hatching. Pure Dustin & Hallack strain. From 1st Pen, $3.50 per setting, 2nd pen, $2.50.

Mrs. S. H. Church, 505 S. Main St., Los Angeles

Buff Plymouth Rocks

A few fine cockerels $2.00 to $4.00 each. Eggs, $2.00 for 15. Very choice Eastern stock.

F. W. Tutin, Riverside, Cal.

Buff Orpingtons

Pen headed by second prize winner at Alameda, '05. $2.00 per setting of 14 eggs.

MRS. ALBERT MILLER,
1913 Ricardo St. Sta A, Los Angeles, Cal.

S. C. WHITE LEGHORNS

I can furnish you with first-class eggs that will hatch strong, vigorous chicks, and give you satisfaction. $2.00 per 15, or $7.00 per hundred. Stock for sale. All eggs and stock purchased of me shall give perfect satisfaction. I make this a point.

Monte Vista Poultry Farm
L. D. Pettit, Mgr. Corning, Cal.

Buff and Black Orpingtons
Buff and Brown Leghorns
Indian Runner Ducks—Bronze Turkeys

Eggs and Young Stock in Season

W. W. Bliss - Duarte, Cal.

SINGLE COMB WHITE LEGHORNS
Thorough-bred Stock. Eggs, $1.50 per 15
INDIAN RUNNER DUCKS
Eggs, 1.50 per 12.
Send for illustrated catalogue

John P. Boden, 638 Second Street, Watsonville, Cal.

Eggs Wanted for Hatching

Our big adobe incubator brings the best results. Send us your eggs and we will return the chickens. Young Chickens and Turkeys Wanted.

Bamboo Poultry Ranch - Glendale, Cal.
AIKEN & CO., PROPRIETORS

Single Comb Brown Leghorns
Exclusively

Stock for sale and eggs for hatching. Eggs from first pen $2.00 per 15 eggs, second pen $1.50 per 15. Incubator lots for $6.00 per 100 eggs. They have always won first prize whenever shown. Large birds and heavy layers.

W. E. Mercer - - Ventura, Cal.

THE FEATHERLEY FARM ORPINGTONS

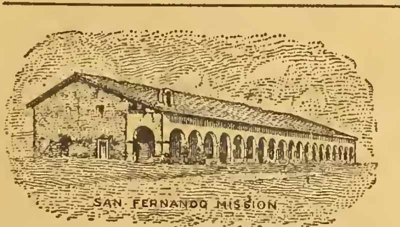
Over 30 prizes, specials and cups in **Buff, Black and White Orpingtons** on 27 entries this year at San Francisco, San Diego and Los Angeles. Bred for utility and egg purposes, as well as prize winning qualities. Eggs from $2 to $3 a setting. Write for free mating list, describing my ten prize yards.

P. L. Harley, Box C, Redlands, Cal.

$8.00 COCHINS $8.00
A TRIO
BUFF, BLACK or WHITE

Send for circular, giving undefeated show records. These are the best winter layers, finest table fowls, and by far the most healthy and hardy. Eggs, $2.00 per setting of 15. Prize winners, Eggs, $3

HARRY McINTIRE, SAN DIEGO, CAL.



Mission View Poultry Ranch

Largest Breeder of
WHITE WYANDOTTES
on the Pacific Coast

Buff Cochin Bantams and One-Quarter Wild Mammoth Bronze Turkeys Winnings at la e Poultry Breeders Society Show on my stock: 27 ribbons, 3 special ribbons, silver cup and Qu en incubator

Mrs. C. D. Hubbard, Box 282, San Fernando, Cal.

LAYING HENS

We have a few choice 1½-year-old Thoroughbred White Leghorn hens, which we are offering at a sacrifice. In order to make room for our young stock we are offering these fowls at $15.00 for 12 hens and 1 rooster or $100 per 100.

We also have a number of 5-months-old pullets, also of the same variety, on which we can name you the same price. If your stock needs renewing, send in your order at once, as they are going fast.

We have a Hatchery of 50,000 chicks per month capacity, from which we are making shipments daily to all parts of the Coast. If you need any just hatched chicks have your order booked at once, so as to get them on the date desired. Our price for just hatched chicks is $7.50 per hundred f. o. b. Petaluma.

We manufacture the famous MUST HATCH INCUBATORS AND BROODERS and a complete line of poultry supplies of every description. We cater to the best hatching egg trade on the Coast.

Before purchasing write for our new illustrated Catalogue B. which contains descriptions, prices, etc., of all our goods.

Must Hatch Incubator Co., Petaluma, Cal.

NEW OFFICERS.

At the annual meeting of the Southern California Poultry Breeders Association last Tuesday evening the following officers were elected for the coming year, W. M. Humphreys, president; V. Price Brown, first vice-president; G. I. Royce, second vice-president; Mrs. A. Basley, third vice-president; L. R. Walton, secretary; Harry Rose, treasurer. Executive committee as follows, L. E. Berken, M. E. Dillingham, C. D. Hubbard, D. K. Adland and C. T. Paul.

LINES TO THE INCUBATOR

Mr. Gardiner, the Pinkerton man, sends in the following, in answer to "Lines to the Hen," which appeared in the Cultivator a week or so ago.

Twinkle, twinkle, little light,
Hatching eggs with all your might,
Not needing smokehouse nor the barn,
Nor any old place upon the farm.

But simply standing where you're set,
You'll hatch a hundred eggs I'll bet,
Beating hens quite ten to one,
And never cackling when its done.

Twinkle, twinkle, all the day,
"Pinkerton" has found a way,
To beat the hen at hatching eggs,
And sends the mortgage down ten pegs.

SOME FINE ORPINGTONS.

When the writer was in San Francisco attending the poultry show he scraped acquaintance with Judge T. E. Orr, secretary of the National Poultry Association, and at that time judge of the Orpington class in the show.

When asked as to the qaulity of California birds compared with the Eastern he replied, "You have some magnificent stock in this State the equal of any I have ever seen in the East. By the way, there is one bird here which I consider as fine a bird as I ever saw in my life, of any breed.' He then took us to see the first prize cock bird of the Orpington class, and to hear him extol the good points of form, feather and color was sufficient to make the heart of any fancier glad.

At that time neither he nor the writer knew to whom this bird belonged but afterward it proved to be one owned by Percy L. Harley of Redlands. Mr. Harley is the owner of Featherly Farm and has it stocked with some beautiful birds, principally buffs, but some black and white Orpingtons.

At San Francisco he made nine entries and won eight prizes and a special. At San Diego, eleven entries, eight prizes and a cup and in Los Angeles ten entries, nine prizes and a special. Thirty prizes in all, including ten firsts and nine seconds.

Considering the magnificent stock which Mr. Harley carries, he makes very reasonable charges for his eggs.

A stroll through his yards is a pleasure because of the absolute neatness with which they are kept and the systematic construction of building and fences.

In addition to his poultry Mr. Harley is a great admirer of Airedale Terriers, a most intelligent and useful breed of dogs.

A special sale list of fine poultry stock is advertised this week by the El Oro Poultry Farm of Fresno. Mr. Holland is thoroughly reliable and handles only first class birds.

Mr. H. A. Phelps of Riverside makes a low price on Standard White Wyandotte eggs which he advertises in the Cultivator.

Mrs. Albert Miller has Barred Plymouth Rock and Buff Orpington eggs for sale. See add

Brown Leghorn and White Rock Eggs
For Sale, $1 per 13, $6 per 100, also two fine White Rock Cockerels at $2 each.
Willis F. Wiesmore, 835 High Ave., Redlands, Cal.

Indian Runner Ducks
Eggs for hatching from fine, healthy, thoroughbred stock. Egg, 75c per 13. M. T. Taylor, 256 N. Eastlake Ave., Los Angeles, Cal.

White and Buff Wyandottes
Prize-Winning, Egg-Laying, Wealth-Producing Strain.
M. E. DILLINGHAM, SAN GABRIEL, CAL.

FREE TRIAL TO ALL

Two Carloads "Old Trusty"
Incubators sold on trial already this year on the Pacific coast and 800 more en route to us. Get one on trial and see for yourself—don't pay big prices for Incubators. Our prices are positively less than any other Incubator sold today in California—no exceptions. Get the big FREE catalogue, 124 pages, 300 illustrations. INVESTIGATE—that's all we ask.

100 Chick Brooders
150 Chick Brooders
200 Chick Brooders
Indoors or Outdoors

McClanahan Co.
Eugene, Ore. and Los Angeles, Cal.

Excelsior Dry Chick Food
Will raise 98 per cent of your chicks. Price, $3.50 per 100 lb.

Excelsior Egg Food
Will make your hens lay eggs. Price, $2.00.

Our assertions have been proven by those that use them. The live articles will do all we claim. All we claim is **results.** Results produce Chicks and Eggs. Chicks and Eggs produce **cash.** Cash is what you raise Chicks and Eggs for. Are we right? We will prove it if you use them.

Del Monte Milling Co.
242 Central Avenue - - Los Angeles, Cal.

Read this For Sale List

White Leghorns
Five Males and Twelve Females.
Brown Leghorns
Twelve Females.
Buff Orpingtons
One Male and Ten Females.
Blue Andalusians
Two Males and Eight Females.
Buff Cochin Bantams
One Male and Fifteen Females.
Black Minorcas
Fifteen Males and Twenty Females
Barred Rocks
Twelve Males and Ten Females.
Buff Rocks
One Male and Eight Females.
White Rocks
Two Males and Five Females.
Mammoth Bronze Turkeys
Five Gobblers.

Also Eggs at $1.00, $1.50, $2.00 and $2.50 per Setting from all the Above Varieties, as well as White Pekin Ducks

The above list is not culls, but regular stock grown from my best pens, such as win in hottest competition. They are bred for utility as well as show and sold at popular prices that appeal to the fancier with a small purse. My profit comes from the great number of sales made on the Pacific Coast at moderate prices, such as $1.50, $2.50. $3.50 and $5,00 per head or $3 50 to $5.00 and $10.00 per pair or trio. If you actually wish stock or eggs let me hear from you before the stock is all picked over or my books filled to overflowing with setting orders. **Healthy, Ranch Grown Fowls.**

H. H. Holland, Prop. El Oro Poultry Farm, Fresno, Cal.

Chamberlain's Perfect Chick Feed

"Nothing Just as Good"

World's Chick Feed of To-Day. The only original Dry **Chick Feed.** All others are worthless imitations. **Chamberlain's Perfect Chick Feed** was used exclusively at the great St. Louis World's Fair during the 7 months. This the highest compliment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.

"Nothing Just as Good"

CHAMBERLAIN'S PERFECT MASH EGG FEED,
THE WORLD'S GREATEST EGG PRODUCER.

GERMAIN SEED CO.,
Pacific Coast Agents. LOS ANGELES, CALA.

SPECIAL PRICES ON TON LOTS.

Distributing Agents: FREDERICK BROWN, San Jose; CHAS. H NEARPASS, San Diego; CHANNEL COMMERCIAL CO., Santa Barbara and Ventura.

Queries and Replies

TIME TO PLOW PEAS.

Editor Cultivator: Will you please inform me through your valuable paper if peas sown in an orange grove make more nitrogen by allowing the young peas to fill out well before discing? If not, when is the best time? —Subscriber. Upland.

We have not the information regarding the amount of nitrogen gathered at any particular time of growth of the pea but it has been demonstrated that some other varieties of legumes give the best practical results if turned under at the time that the majority of the pods are about grown. It has been shown by following legumes with wheat, the yield of the latter was fully doubled (when legumes were plowed in when majority of pods were nearing full size) over the yield given when following the same legumes which were plowed under just when they were in bloom. What the effect on orange or lemon trees would be, we cannot say, but would suppose that the pod stage would be the best.

EUCALYPTUS TREES.

Editor Cultivator: Please advise me in your next issue what is the best eucalyptus tree to plant for wind break. I do not want the blue gum as same sheds the bark. I have plantsome E. rudis but cannot get any more. What is the next best? I want a tall grower also ornamental. Climate dry in summer; sometimes very hot; average rainfall 20 inches; no irrigation. Plenty of wind in summer. I want a variety that does not shed its bark.—T. A. Vacaville.

There is no such thing as a eucalypt with persistent bark under all conditions, but like rudis, the following usually retain their bark: sideroxyton, viminalis, rostrata and polyanthemos. Only those are listed which are believed to be easily procured and to thrive in your section.

SHADE TREES

Editor Cultivator—My house is situated in an orange orchard surrounded by fifteen year old orange trees, but we have neglected to plant very many shade trees around the house, and now feel the want of them. Would you be kind enough to give me the names of a few nice trees that would answer my purpose. I want a large tree and would prefer a deciduous tree, but of course am not set on this point, and would be glad to follow your advice. A. G. S., Porterville.

No finer deciduous shade tree can be found than the Spanish or Italian chestnut and it will yield profit as well as nuts. Better plant at least two as a single tree is often "self-sterile" and does not bear nuts. A good smaller tree would be the pecan. For an evergreen nothing can surpass the pepper tree for yard shade.

630 EGGS
A Month from 24 Hens

"I have been feeding my flock of twenty-four hens for some time with Prussian Poultry Food, and for the last month they have averaged 21 eggs a day. I think this record is hard to beat."
Mrs. Lewis Hilt,
Lebanon, Ohio.

PRUSSIAN Poultry Food

has no equal for putting hens in laying condition. Also the best safeguard against epidemics. Prevents and **Cures Chicken Cholera,** Roup, Gapes, etc.

In 25c and 50c Packages, Pail, 25 lbs. $3.50.

Use Prussian Lice Killers, Liquid or Powder.

"Poultry Profits," is a book you should have. 36 pages; practical, helpful. Free if you write us what stock you own. Address

Prussian Remedy Co.,
St. Paul, Minn.

AGENTS: Vaughan Seed Store, Chicago, Ill. J. W. Wilder & Co., Cincinnati, O. Lee-Pioneer Seed Co., Denver, Colo. Portland Seed Co., Portland, Ore.

Climate and Crops

General Summary.—The weather continued warm and cloudy most of the week, with slightly lower temperature in the Sacramento valley and several days of bright sunshine in the South. Light showers were frequent in all sections and heavy rain and snow fell in the mountain districts.

The rain caused a partial suspension of farm work and orange picking and in some sections retarded the growth of crops, but in other respects it was beneficial. Grain is in good condition and making fair growth, but would be improved by clear and warmer weather. With favorable conditions it is probable the wheat, oat and barley crops will be fully up to average and in some sections the yield will be the best for several years. Alfalfa is making good growth and heavy crops are probable. Work in hop fields is progressing rather slowly owing to frequent showers. Sugar beet planting continues. Hills and valleys are thickly covered with new growth and green feed of good quality is abundant. Stock are in prime condition and gaining flesh.

Many varieties of deciduous fruits are in full bloom and prospects are good for early and large crops. In some sections the rain caused slight injury to almonds and other trees in blossom. Strawberries are in bloom in the Sacramento valley and an early crop is expected. Vineyards and orchards are in excellent condition. Large shipments of oranges, lemons, and grapefruit are bing made from Southern California.

Eureka Sunmmary.—Warm, rainy weather throughout the week caused some fruit trees to bloom. Grain is in excellent condition and growing rapidly. Grass is also making satisfactory growth. Present prospects are good for abundant crops.

Los Angeles Summary.—All crops are in good condition and the outlook was never better. Range grass is growing rapidly. The hay crop is assured with a few later showers. Orange picking has been resumed since the rain. Deciduous and citrus trees are in general bloom.

TEST OF DEEP WELL PUMP.

During the past week the Pomona Manufacturing Company of Pomona, Cal., made a test of one of their deep well pumps installed for the Santa Anita Sand Co., of Santa Anita, Cal., a subdivision of the noted Baldwin ranch—comprising nearly 1000 acres.

This plant is one of several and is designed to furnish water for this tract for both irrigation and domestic use.

The water is raised from 200 to 250 feet below the surface and forced through over 500 feet of pipe into a reservoir 15 feet above the location of the pump.

Owing to the limited size of the well which is 12 inch the largest size working barrel that could be used was 9 inch and in order to deliver the quantity of water needed, namely 40 miners inches, it was necessary to operate the pump at a piston speed of 115 to 120 feet per minute, something quite remarkable in a pump 250 feet long, but the work was done without any vibration on the machinery or jerk or jar on the rods, and the plant worked remarkably smooth and the owners were not only pleased but delighted.

The test was witnessed by some of the best hydraulic engineers of this locality and members of irrigation companies such as Geo. D. Whitcomb of Glendora; William Bowring and W. A. Johnston of San Dimas and others.

Anyone wishing to see this plant operate can take the Monrovia car to Baldwin Ave., and go south 1-4 mile.

Anyone interested in this type of a pump would be well paid for their time and trouble in making the trip as it represents the newest and best design of machinery for this purpose, and in both strength and quality of workmanship is a way ahead of anything else.

Indian Runner Ducks are advertised by W. T. Taylor on another page.

LESS CLIPPER-CUT FRUIT

As the season will soon be here when citrus shipments will cause to come back reports of more or less decay the wise grower is casting about for a remedy.

We gave in the Cultivator some months ago a description and illustration of the Steffa Clipper which caused much favorable comment. This clipper has since been manufactured in large quantities and may now be secured of nearly all hardware men.

If unable to get them, write at once to E. P. Steffa, Pomona.

Round, smooth "points", curvature sufficient to permit close-cut stems and a protecting feature which absolutely prevents clipper-cut fruit are its features. *

The Maywood Colony Nursery of Corning, advertise the world famous fig and other nursery stock for sale in the Cultivator. Write for prices.

The Pacific Coast Borax Co., 114 Sansome st., San Francisco will send a free sample of their fine borax soap to every reader of the Cultivator who may send them a writter request for some. Their advertisement will be found in the Cultivator and they will be glad to receive a request for samples. A postal card will answer if you give your name and address plainly.

ChinoRanch

Fertile Lands

$75 to $200 an Acre. Very Easy Terms.

Ninety Minutes from Los Angeles. Adjoining cities of Pomona and Ontario. Crossed by 3 transcontinental railroads. State Agricultural Station on the Ranch.

Barrels of booklets, circulars and various others forms of literature have been written concerning the merits of the various ranch properties of Southern California—but after all has been said or written the fact remains that the Chino Ranch is the strongest "productive home" proposition on the market today.

It is making a direct appeal to the scores of people now unsuccessfully farming small tracts, from lack of water, poor soil and other unfavorable conditions.

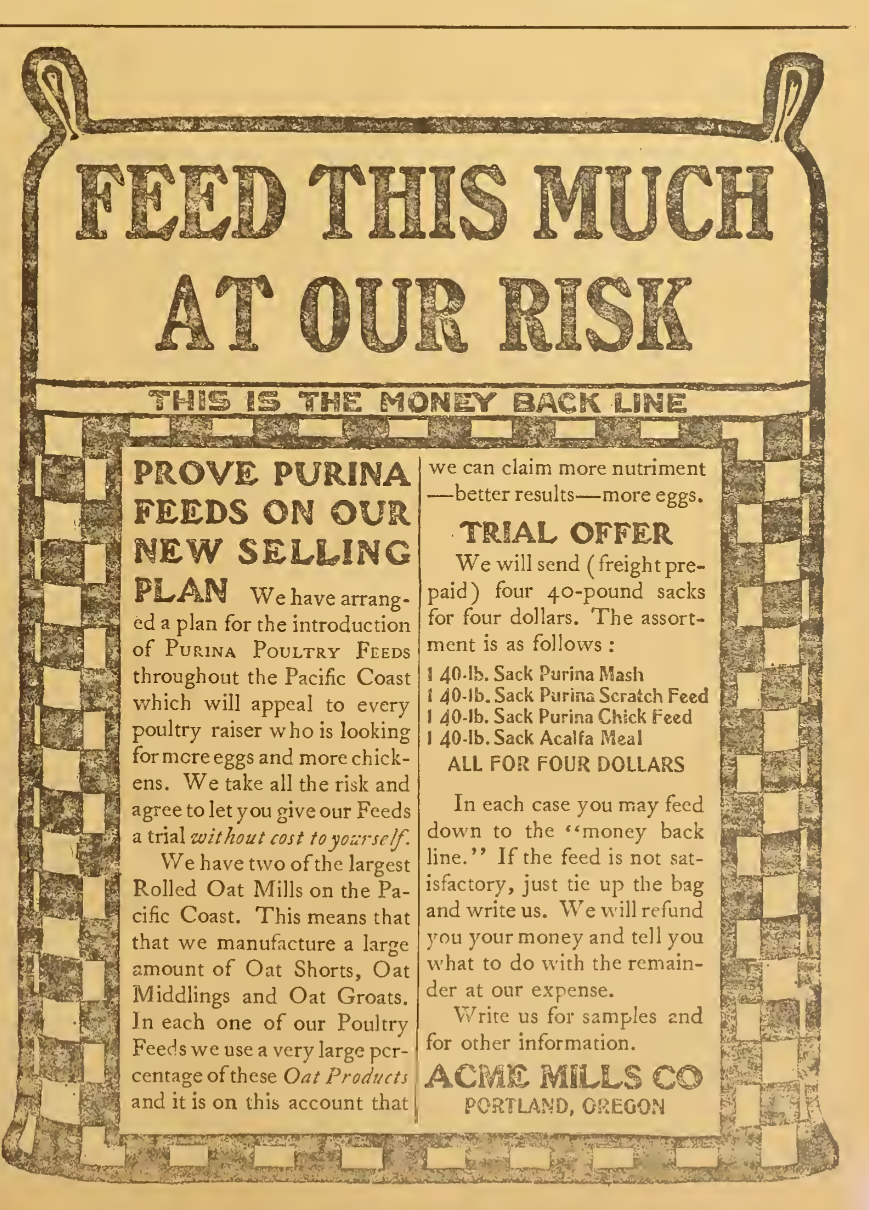
To the hundreds of small salaried people now throwing away the best working day of their lives.

To the invalid who wants a home that will earn for him a living. To all people who are seeking self-sustaining homes, surrounded by every advantage that tends to make ranch life profitable and pleasant.

Alfalfa, walnuts, sugar beets, onions, Egyptian corn and deciduous fruits are creating competences for Chino Ranchers, and the great earning capacity of Chino soil is officially recognized by the State Agricultural Department.

Southern Pacific trains leave daily for Chino at 8:05 a. m. and 5 25 p. m.

Chino Land & Water Co.
Main Office, Chino, Cal., or 720 Trust Bldg, Los Angeles
D. O. Stewart & Co., Special Sales Agents
138 South Broadway Los Angeles, Cal.


FEED THIS MUCH AT OUR RISK

THIS IS THE MONEY BACK LINE

PROVE PURINA FEEDS ON OUR NEW SELLING PLAN We have arranged a plan for the introduction of Purina Poultry Feeds throughout the Pacific Coast which will appeal to every poultry raiser who is looking for more eggs and more chickens. We take all the risk and agree to let you give our Feeds a trial *without cost to yourself.*

We have two of the largest Rolled Oat Mills on the Pacific Coast. This means that that we manufacture a large amount of Oat Shorts, Oat Middlings and Oat Groats. In each one of our Poultry Feeds we use a very large percentage of these *Oat Products* and it is on this account that we can claim more nutriment—better results—more eggs.

TRIAL OFFER

We will send (freight prepaid) four 40-pound sacks for four dollars. The assortment is as follows:

1 40-lb. Sack Purina Mash
1 40-lb. Sack Purina Scratch Feed
1 40-lb. Sack Purina Chick Feed
1 40-lb. Sack Acalfa Meal
ALL FOR FOUR DOLLARS

In each case you may feed down to the "money back line." If the feed is not satisfactory, just tie up the bag and write us. We will refund you your money and tell you what to do with the remainder at our expense.

Write us for samples and for other information.

ACME MILLS CO
PORTLAND, OREGON

Household Department

THE MUSIC THAT CARRIES

I've toiled with the men the world has blessed,
I've toiled with the men who strove with zest,
And I've toiled with the men who wailed.
And this is the tale my soul would tell
As it drifts o'er the harbor bar—
The sounds of a sigh don't carry well,
But the lilt of a laugh sings far.

The men who were near the grumbler's side—
Oh, they heard not a word he said!
The sound of a song rang far and wide,
And they hearkened to that instead.
Its tones were sweet as the tales they tell
Of the rise of the Christmas star—
The sounds of a sigh don't carry well,
But the lilt of a laugh rings far.
—S. W. Gillman.

A SPIRITED WITNESS

Sir Henry Irving was once the guest of honor at a lawyer's banquet in New York. In the course of a graceful address he said:

"You, gentlemen, have given me the most helpful advice on the art of acting—will you permit me to give you in return a piece of advice regarding your profession?

"My advice, then, is that you make your cross-examinations less rigorous, less harsh. What is the good of treating an honest and sensitive witness in the witness stand as though he were a sneak thief?

"I confess that I am not in sympathy with harshness in cross-examinatiin, and whenever I hear of a witness turning on an overbearing lawyer my heart rejoices.

"My heart rejoiced last week. A young man in my company was a witness in a case of robbery. He had seen a thief snatch a young girl's pocketbook and moke off.

"Well, the thief's lawyer cross examined my young friend shamefully. He roared at him, shook his fist at him, raved at him.

"And at what hour did all this happen?" the lawyer, sneering, asked toward the end of his examination.

"'I think—' my friend began, but he was at once interrupted.

"'We don't care anything here about what you think!" said the lawyer with a snort of contempt.

"'Don't you want to hear what I think?' said my young friend mildly.

"'Certainly not," the lawyer roared.

"'Then I may as well step down from the box. I'm not a lawyer. I can't talk without thinking."

A RESOURCEFUL BOY

The late Peter Lorillard Ronalds liked perseverance in his servants. When he told them to do a thing, he expected them to do it, no matter how difficult it might be. If he sent a stableman out to buy a certain kind of whip, he expected him not to return until the whip was secured, tho' he have to visit a hundred shops to get it.

There is a story told about the way Mr. Ronalds came to hire a young groom.

He was in a drug store one day when a shabby little boy entered.

The boy advanced boldly to the clerk, took a small camel's hair brush from his pocket and said:

"Smell this an' gimme 10 cents' worth. I've forgotten the name."

The clerk smiled, smelt, and took down the iodine bottle; and Mr. Ronalds engaged the ingenious and resourceful lad on the spot.

TO BREAK THE MONOTONY

Chairman Shonts of the Panama Canal Commission was pointing out the necessity of amusement for the workmen on the huge canal.

"Nothing breaks the health and cows the spirit like monotony," he said. "The monotony of every workman's life must be pleasantly varied, or the poor fellow wil be unable to work well."

He smiled.

"A young lady recently took a post as governess in a rich New York family," he said. "The residence of this family was magnificent. The young lady was especially impressed by the footman who stood in the hall.

"This footman was tall and robust and shapely. He wore a glittering livery, with knee breeches and brown silk stockings, and standing in the hall opening the door, or conducting visitors to the drawing room, he was a stately and grand and solemn picture. His face was as expressionless as a statue's. He was as stiff and unbending as a lamp post.

"Well, one day, in the family's absence, the new governess heard down stairs a most hideous din—shouts, yells and shrieks, as though a couple of maniacs had broken loose and fallen to fighting.

"As she listened nervously, a maid hurried up stairs, entered her room, and said:

"'Don't be alarmed, Miss. It's only the footman. When everybody is out he always shouts and hollers so. He says he can't help it. It relieves his feelings.'"

OUR GIRLS

We are all the time talking about our boys, about what we can do for our boys, but we seldom stop to ask ourselves what we can do for our girls. Now the boy is no better than the girl, indeed, half the time he isn't her equal mentally nor morally. He doesn't bring the same influence into the home nor does he take it into society. We make him a selfish creature to start with, because we instil in his mind the idea that he is a little better than a girl, even if that girl be a sister. His mother is more to blame for this than any other person, for usually she fusses over him, gives him the best of everything and preaches to him his great importance in the world and his promising future Generally the more money in the family the more lavish are the expenditures. The girl goes along in her own way, not much is made over her nor much said about her. She isn't told how necessary she is to the universe nor how she is likely to play an important part in the social and religious matters of her time. If she isn't told in so many words that she is inferior to her brothers she is made to feel it and the thought isn't calculated to inspire her with any great amount of ambition.

Such teaching on the part of parents is a mistake. It is a grievous mistake. The sooner we get away from it the better both for the boy and the girl. The fact is, and we base the statement on experience of several years as a teacher, that girls are superior in many things to boys. They have kinder hearts, quicker perception, keener sense of propriety and are more truthful usually. They need more encouragement, because they are moulded of finer fabric. They need sympathy. Jollity and variety in life just as much as their brothers, and they want to be given to understand that they are just as much needful to the world. The moment all can impress upon our girls the fact that they are equal partners with the boys in life's great work, the sooner will they realize what they must fit them for and how they must adapt their condition to their future responsibilities. Dr. Ella S. Webb, editor of the Farmer's Wife writes some excellent things about the care of boys and girls, and some of them are so practical they really

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We can save and satisfy you. Free expert selecting of latest city goods, at best city stores, at lowest city prices. WRITE US NOW.
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434 South Hill St., Los Angeles, Cal.

A NEW TRAIN
The Los Angeles Limited
DAILY BETWEEN
Los Angeles & Chicago
66 HOURS VIA
SALT LAKE ROUTE
UNION PACIFIC
CHICAGO & NORTHWESTERN
A Solid Through Train consisting of Standard and Tourist Sleepers, Dining Cars, Library-Buffet and Observation Cars, steam heated and electrically lighted throughout.
ALL TRAINS RUN THROUGH SALT LAKE CITY.—THE SCENIC TRIP OF AMERICA
Information and literature gladly furnished at our City Ticket Office, 250 So. Spring St., or First Street Station. Phones Main 352-4095, Home 352-490.
SALT LAKE ROUTE
E. W. GILLETT, Gen. Pass. Agt. T. C. PECK, Asst. G. P. Agt.
Los Angeles, Cal.

"Dependable Furniture at a Fair Price"
A Rare Display
of Pieces for the Bedroom
Seldom will you find a better display of truly good furniture for the bedroom than we have assembled here. Every piece in our excellent showing is made with the greatest of care by the most skilled artisans, and only the very best and most carefully selected woods are used. We make special mention of our superior genuine mahogany pieces which are unsurpassed by any to be found on the Coast. While we have provided this excellent assortment, we have in no way slighted the beautiful bird's eye maple and golden oak pieces. We have a most creditable showing in all of the w This furniture is representative of the highest type of the furniture-maker's art, and is surely worthy of your consideration when you are doing your furniture buying. We are sure some of these pieces will meet with your favor.
"All Goods Marked in Plain Figures."
NILES PEASE FURNITURE COMPANY
439-441-443 SOUTH SPRING STREET, LOS ANGELES, CAL.

20 MULE TEAM BRAND
PURE POWDERED BORAX-BORAX SOAP and HYGIENIC BORAX COMPOUNDS
PACIFIC COAST BORAX COMPANY
San Francisco Chicago New York
Borax is well known as the world's greatest cleanser and most harmless antiseptic. 20 MULE TEAM WHITE BORAX SOAP is the only real Borax Soap on the market. It makes washing easy, makes clothes and dishes hygienically clean, leaves the hands soft and white. ☞ **Send for free sample** to PACIFIC COAST BORAX COMPANY, 114 Sansome Street, San Francisco, California.

sound as if they had been evolved by years of experience in bringing up, educating and settling in life a great many young people. Among these good suggestions we include the following:

"Don't keep girls all the time at routine tasks—everyday drudgery.

"Give them a share in the interests of the home by talking over their plans and prospects, make use of their suggestions or let them carry out their own ideas.

"Give them a room of their own and allow them to arrange it as they wish, requiring only that it be kept neat and in order.

"Welcome and entertain their friends, and make a little party for them occasionally. Send them down to do the shopping for the house now and then. They will not be properly equipped to manage homes of their own without such experience, and mistakes are better made now than then.

"Go visiting for a day or two or a week occasionally to give them the experience of running the house alone when they will learn many things they can learn in no other way than when put upon their own resources.

"Provide them in some way with a little money of their own, either a small sum in payment for some regular work, or as their share of the proceeds from the chickens, the garden or something for which they share the work and care. Young people can never learn the value of money or its proper use unless they have it to use.

"Give them every advantage possible of education, music, art, not that they may feel they have grown superior to life in the country home, but that they may the better enjoy it as their knowledge and true culture widens.

"See that they have proper outside interests—the school, the church, the young people's society and share their perplexities and pleasures, seeking and keeping their confidence, and wisely guiding them in lines of social effort for the good of others—the temperance society, the missionary society, etc."

ONE WAY TO BE ATTRACTIVE.

The housekeeper has many things on her mind, but she should not neglect giving at least ten minutes out of every twenty-four hours to her own personal attractiveness. Every boy and girls thinks "mamma" is beautiful, and why should she not be universally admired, even though not beautiful by nature, if her appearance shows she has taken care of her complexion? Every night, just before you retire, try washing the face with good soap, rinsing and drying well, then rubbing with a solution made of two parts rose water, one part glycerine and the juice of two lemons. Have enough altogether to make one pint. Put just enough on to make the face moist, and rub until the skin is rosy-red. If there are any wrinkles around your eyes or mouth, be careful you do not rub parallel with them, but straight through, crossing them. The effect will surprise you. The freckles will gradually grow dim, leaving a soft, pink-white smooth skin.—January Woman's Home Companion.

FINALLY.

Count not life's story vainly told
If but in pathways sunny
For you a lily's cup shall hold
A single drop of honey.
Atlanta Consitution.

Cookery Recipes

CORN BREAD

To 1 quart sifted cornmeal add 1 tablespoonful sugar, 1 tablespoon flour. 1 teaspoon salt and 1 teaspoon soda. Sift together stir in sour milk to make a thin batter, and bake in a quick oven.

* * *

WATER CAKE

To 1 cup water add 1 cup sugar, 1-2 cup butter, 3 cups sifted flour, 1 heaping teaspoonful baking powder. One and one half cups rich sweet cream is preferable to butter and water. Cover with favorite icing. A cheap icing is made of 1 cup granulated sugar and 1 cup skimmed milk. Boil until it hairs, remove from fire, add choice flavoring, beat till it sugars, return to fire, add a few drops of water, stir and as soon as it boils put on cake.

* * *

FRUIT CAKE

Take three quarters cup sugar, half cup lard half cup molasses, half teaspoon each of cloves, alspice, cinnamon and nutmeg, 1 teaspoon soda, 1 cup each of raisins, and currants, half cup of citron, three fourth cup up milk, 3 1-2 cups flour. Cream sugar, lard and salt together, add milk and spices, foam the soda in molasses, add to the creamed ingredients, and then stir in the flour. Roll fruit in some of the flour and mix well into batter. Bake a bit in a patty pan. If it stands the test, bake the whole quantity in a deep, square tin 1 hour. Have good heat to start with. If the test falls a bit, or seems too rich, add another half cup flour and a few drops of milk, if necessary. This is a fine cake when properly put together and well baked. Don-t forget to put a piece of paper, well greased into the bottom of the pan. Will some one please report their trial? Have good heat to start with in baking.

* * *

CITRON CAKE

One cup sugar, half cup lard(scant) 1 teaspoon salt, 1 teaspoon vanilla, 1 cup milk, 3 cups flour, 2 teaspoons baking powder,1 cup citron. Cream sugar and lard, add milk and flavoring, sift baking powder into flour, and stir all together thoroughly. Into the pan put a layer of the cake batter, then a layer of citron. Bake in an oblong tin, on the middle grate in the oven. For the frosting use 2 cups confectioner's sugar and sweet cream enough to moisten the sugar.. Color it red or green, spread on the cake, and lay on pieces of citron.

Health affects one's views of life perhaps more than circumstances, still the invalid is often bright, cheerful and hopeful. It is well to have care and forethought, but the person who is always foreboding evil becomes disagreeable to himself and to others. It is sometimes hard to look on the bright side and shut out the dark, but the optimist gains much strength and pleasure.

Women would enjoy much better health if they work more in the garden. There is something in the soil which gives added strength to the system, then open air exercise is conducive to health. Plenty of out door exercise is nature's own cure for most human ills.

"Do you love your husband?"
"Indeed, I do."
"Does he love you?"
"Devotedly."
"My goodness! It's just like a novel, isn't it?"—Cleveland Leader.

Long Lived Tools

Keen Kutter quality tells in the long life of Keen Kutter Tools as well as in better work and greater satisfaction. It is not an unusual thing for Keen Kutter Tools to be passed down from father to son, so long do they last.

The long life of Keen Kutter Tools compared with the short term of service of inferior brands makes Keen Kutter Tools by far the least expensive tools that you can buy. The

KEEN KUTTER

trademark covers every kind of tools so that you may always be sure of highest quality by insisting upon Keen Kutter Tools.

An example of the Keen Kutter excellence is found in Keen Kutter Hatchets and Handled Axes. These are made of the highest grade of steel, on the most approved lines, and by the best workmen. Every Keen Kutter Hatchet and Axe has the handle wedged with the Grellner Patent Everlasting Wedge which positively prevents the head ever flying off or working loose, and is sharpened ready for use. These are exclusive Keen Kutter features.

Some of the other kinds of Keen Kutter Tools are: Axes, Adzes, Hammers, Hatchets, Chisels, Screw Drivers, Auger Bits, Files, Planes, Draw Knives, Saws, Tool Cabinets, Scythes, Hay Knives, Grass Hooks, Brush Hooks, Corn Knives, Eye Hoes, Trowels, Pruning Shears, Tinners' Snips, Scissors, Shears, Hair Clippers, Horse Shears, Razors, etc., and Knives of all kinds.

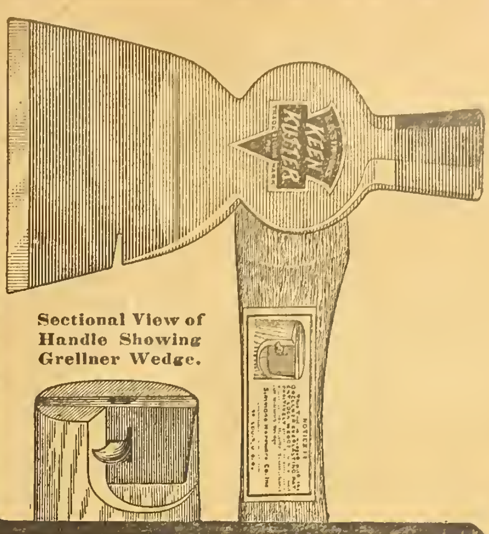
E.C. SIMMONS KEEN KUTTER TRADE ST. LOUIS MO. MARK

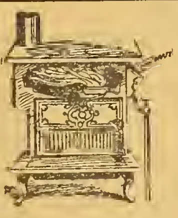
If your dealer does not keep Keen Kutter Tools, write us and learn where to get them. Send for Tool Booklet.

Every Keen Kutter Tool is sold under this Mark and Motto:

"*The Recollection of Quality Remains Long After the Price is Forgotten.*"
Trade Mark Registered.

SIMMONS HARDWARE COMPANY,
St. Louis **New York.**


Sectional View of Handle Showing Grellner Wedge.
KEEN KUTTER



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You can do it with the

HAGUE IMPROVED DOMESTIC OIL BURNER

It burns more air than any other burner on the market. Can be fitted to stoves, ranges, furnaces, and all kinds of heating systems. Simplest and most economical burner on the market. If you want the most heat for th least money, write for information to

Hague Domestic Oil Burner Co, 810 So. Spring St., Los Angeles, Cal.

Security Savings Bank

LARGEST SAVINGS BANK IN SO. CALIFORNIA

Capital and Surplus, $630,000. Total Resources, $14,000,000.00

4% Interest Paid on Term Deposits. Write for Booklet "A" on banking by mail, also rain-fall chart.

HERMAN W. HELLMAN BUILDING, LOS ANGELES, CAL.

Santa Fe

COLONIST RATES TO CALIFORNIA

Will be in effect every day, Feb. 15 to April 7, and Sept. 15 to Oct. 31, 1906, from all points in the east and south.

Following are a few:

Chicago	$33.00	Kansas City & Leavenworth	$25.00
St. Louis	30.00	St. Joseph & Atchison	25.00
Galveston	26.45	Council Bluffs & Omaha	25.00
Dallas, Houston and Fort Worth			25.00
Nearly all points in Kansas, Oklahoma and Indian Territory			25.00

Colonist rates are also in effect from all points east of Chicago and south of the Ohio river.

Santa Fe Agents in California will take deposits of money to cover price of tickets, which will be promptly furnished to passengers at any point from which these rates are in effect.

California illustrated literature mailed free to any address or may be had from Santa Fe representatives.

Tourist leeping Car Lines

Colonist tickets are honored in tourist sleeping cars which run via the Santa Fe to Los Angeles and San Francisco.

When writing to Advertisers Please mention Cultivator

IT'S PENNY WISE
Policy to set out a good tree, costing good money and then let the sun burn the bark, or the rabbits gnaw it when for $1.00 an acre you can get Yucca Tree Protectors that are practically indestructible. Write for free sample of the wrap. Yucca Mfg. Co., 2124 Willow St., Los Angeles.

VULCANITE
ROOFING

JUST THE THING ALL THE YEAR ROUND

Non-conductive of heat and cold. Does not buckle—lays perfectly smooth. A material which is at once light, strong, durable and cheap, and at the same time water-proof, wind-proof, acid and fume-proof. Also used for covering outside of buildings, floors of warehouses, offices, etc. Requires no paint; is permanent and inexpensive. Comes in various weights.

Samples and price list upon application.

C. SCHEERER & CO.
255 S. LOS ANGELES ST.
LOS ANGELES, CAL.

IWANS' POST HOLE AND WELL AUGER
Best earth auger in the world. For Fence and Telphone Post Holes, Wells, etc. Three times the work accomplished with an Iwan Auger than with any other. Makes hole smoothly and quickly; empties easily; is very durable. Used by U.S. Gov't. 3, 4, 5, 6, 7, 8, 9 and 10 inch, $2.50 each; 12 inch, $6.00; 14 inch, $7.50. Sample at special price to introduce. Agents Wanted. Inquire of dealers or write direct for particulars. IWAN BROS., Box. A Streator, ILL.

MARK THE BABY'S GRAVE
Headstones - $4 Up
Monuments - $11 Up
Blue or White Marble nicely lettered. Instructions for setting. Save agent's commissions. *Send for Catalogue.*
W. J. MOORE, 581 3d St., Sterling, Ill.

OPIUM and Whiskey Habits cured at home without pain. Book of particulars sent FREE. B. M. Woolley, M.D., Atlanta, Ga., 103 N. Pryor St.

Put It On Yourself

In addition to embodying every desirable feature of the best standard roofings

Pioneer
Rubber Sanded Roofing

can be laid right without the services of a professional roofer. It is pliable in every climate, won't bulge or crack or crease when you lay it and stays flat and firm after it is on. That weather-proof surface of Hard Flint Sand is another feature you should study thorougly. It means many years of added wear—which means a big saving to you in roofing expenses. Another feature—it requires no painting or coating of any kind at any time. Another big saving.

Send for samples and prices. Our roofing booklet "D" will tell you about all kinds of Roofing and Roofing Papers for every purpose. Send for it today.

Pioneer Roll Paper Co.
Los Angeles, Cal.

The Produce Markets

Los Angeles Markets.

Los Angeles, March 1, 1906.

Butter remains unchanged but it is confidently predicted that the creamery board will cut the price at the Saturday meeting.

Eggs show no change, while poultry shows a keen demand in spite of moderately heavy receipts.

Asparagus and new peas are more plentiful while the potato market remains glutted with inferior grades.

Butter.

B. of T. Creamery, per roll	.60
Valley Creamery, fancy	.60
Valley Storage	52½

Cheese.

Cal. 3-lb. hand	18½
Cal. Young America	17½
California Anchor	16½
Northern	16@17
Domestic Swiss	19@20
Imported do	26½@27

Eggs.

Eggs, Fresh Ranch	18

Poultry.

Fryers, 2 1-2 lbs	18@19
Broilers, under 2 lbs., per lb	19@21
Young Roosters, per lb	16@17
Hens, per lb	14
Ducks, per lb	14@15
Geese	14@15
Turkeys	19

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock:

Hogs, 200 lbs	6
Prime Steers	4½
Cows	3¼
Calves, per lb	5
Sheep, ewes, per head	5.00
Lambs, per head	3.25
Wethers	5½

Potatoes.

Northern, per sack	1.65@1.75
Locals, per cwt	1.10@1.25
Sweets, white, per cwt	2.40@2.50
Sweets, yellow, cwt.	2.00

Vegetables.

Onions, Australian Brown, cwt.	1.75@2.00
Onions, yellow, cwt	1.75
Garlic	7@10
Cabbage, per sack	35@50
Cauliflower, per doz	40@60
Asparagus	10@12½
Lettuce, per doz	15@25
Bell Peppers	15
Chili Peppers, green	6½@8
Cucumbers, per doz.	60@2.50
Radishes, per doz	10@15
Lima Beans	10@15
String Beans	15@17
Beets	.40
Green Onions, doz. bunches	20@25
Carrots, doz. bunches	.40
Turnips, doz. bunches	30@40
Celery, per doz.	35@40
Peas, per lb.	4@4½
Egg Plant	8@10
Tomatoes, local	75@1.00
Parsley, per. doz. bunches	.60
Hubbard Squash, per lb	1½

Citrus Fruits.

Lemons, standard	90@1.00
Lemons, choice	1.00@1.25
Lemons, fancy	2.00@2.25
Grapefruit	1.75@3.00
Navels, extra fancy	2.00@2.25
Navels, choice	1.40@1.60

Fresh Fruits.

Apples, Bellefleur	1.35@1.50
Fall Pippins	1.00@1.10
Red Pearmain	1.00@1.25
Strawberries, per box	.25
Guavas, per basket	3½@4
Pears, Winter Nellis, per lb	4½@5
Casaba Melons, large crates	2.25@2.50

Dried Fruit.

Apples, evaporated, ex ch., 9; ch, 8½.

Apricots, ex ch, 11; fy, 8½; ch, 7½.

Peaches, fy, 8½@10½; ch, 7½@8.

Santa Clara Prunes, 30-40, 8c, 40-50, 7; 50-60, 6c; 60-70, 5½.

Loose Muscatel Raisins, 2-crown 4½; 3-crown, 5; 4-crown, 6.

Beans, Dried.

Limas	5.00@5.50
Pinks, fancy	2.50@2.65
Lady Washington	3.00@3.10
Small White	3.50@3.75
Black Eyes	5.50@6.00

Nuts.

Walnuts, No. 1, soft shell	14½
Do, No. 2	8@10
Do. No. 1, hard shells	12
Do. No. 2, hard shells	10
Almonds, paper shells,	16@17
Almonds, soft shell	14
Peanuts, California	6@7½

Honey.

Honey, comb frames	14@15
White, strained, per lb	6½@7
Light Amber	6
Amber	5
Beeswax	27

Hay.

Barley	12.00@14.50
Alfalfa, local	13.00@13.50
Alfalfa, Northern	11.00@12.50
Wheat	13.50@14.50
Tame Oat	14.50@16.00

Grain.

Selling prices of mill stuffs f. o. b. cars L. A., in quantity, are:

Rolled Barley	1.40
Bran	1.25
Feed Corn Meal	1.45
Shorts	1.45
Wheat, per cwt	1.60
Cracked Corn	1.40
Oil Cake Meal	2.25
Cocoanut Meal	1.55

San Francisco Markets.

San Francisco, March 1, 1906.

Butter.

Weaker markets prevailed for all descriptions of Dairy Products yesterday, the continued mild weather causing increased arrivals and buyers, in anticipation of lower prices, restricting their orders to absolute current needs.

Fresh California extras	26
Fresh California, firsts	25
Fresh California, seconds	24
Eastern extras	20

Cheese.

California, new	13
California firsts	13
California seconds	12
Eastern Cheddars	16
Storage, California	14
Storage, Eastern	15

Eggs.

Eggs attracted but little interest, selected selling in a moderate way at a 1 cent decline and values for the cheaper sorts dropping in sympathy.

Eggs, fresh ranch	16
Firsts	15
Storage, Eastern	14

Poultry.

Old Roosters, per doz	4.50@5.50
Young Roosters, per doz	6.00@7.50
Hens, per doz	5.00@8.00
Ducks, per doz.	5.00@7.00
Turkeys. per lb	15@18
Geese, per pair	1.75@2.25

Live Stock.

Conditions in the live stock market are purely a reflection of the features noted from day to day for some time past, trading in all departments continuing buoyant and qiuck clean ups of A1 stock being readily effected at the maximum prices. Hogs hold very firm at full quotations with competition keen.

Hogs, per lb., 80 to 130 lbs	6¾
Hogs, per lb., 130 to 250 lbs.	7
Hogs, per lb., 250 to 350 lbs	6½
Hogs, per lb., rough heavy	4½@5
Prime Steers, lb	7¾@8
Cows, per lb.	5½@6¼
Calves, lb.	5@5½
Sheep, ewes, per lb	4½@5
Lambs, per lb	5@7
Wethers, per lb.	5@5½

Potatoes.

River Burbanks	50@85
Oregon Burbanks	75@1.20
Salinas Burbanks	1.00@1.50
Sweets, Merced	75@1.25

Vegetables.

Asparagus, per lb	10@11
Rhubarb. per box	1.50@1.75
Onions, yellow, per sack	75@1.00
Bell Peppers, green	17@22
Cucumbers, per doz	75@1.00
Tomatoes, per box	1.25@1.75
String Beans	17½
Wax Beans	18@20
Summer Squash, per box	2.00@2.25
Green Peas, per lb	5@8

Citrus Fruits.

Navels, fancy	2.50@3.00
Seedlings	1.25@1.50
Lemons, standard	1.00@2.50
Grapefruit	1.00@3.25
Tangerines	1.50@1.75

Fresh Fruits.

Apples were in light supply and firm at the old standard of values.

Apples, per box, extra	1.75@2.00
Apples, fancy	$1.25@1.50
Cranberries, per bbl	15@16

Beans, Dried.

Limas	4.90@5.00
Pinks	1.90@2.00
Small Whites	3.15@3.25

Black Eyes	4.40@4.50
Bayos	3.40@3.50
Red Kidney	3.50@4.00
Horse Beans	1.65@1.85

Hay.

Barley, new	$8.00@11.00
Alfalfa	7.50@12.00
Wheat	11.00@16.00
Oats	7@12.50

Grain.

Wheat	1.30@1.32
Barley	1.20
Corn	1.33
Oats	1.50@1.70
Rye	1.45@1.52
Rolled Barley, per ton	25.00@26.00
Bran, per ton,	19.50@20.50
Feed Corn Meal, per ton	20.50@30.50
Middlings	½......26@30
Cracked Corn, per ton	28.50
Oil Cake Meal, per ton	37.00

Hops.

Cocoanut Cake, per ton	23.00

CITRUS MARKETS

The Eastern Citrus market still holds at the same top notch scale of prices as for many weeks past, making a most phenomenal season for California growers in the way of financial returns.

NEW YORK, Feb. 27.—Fifteen cars were sold at today's auction. The market is very strong. The weather is favorable.

NAVELS

	Averages
White C st Covina Ex	$2.55
White C st Covina Ex	2.70
Red C xc Covina Fruit Ex	2.70
Blue C fy Covina Fruit Ex	2.80
Red C xc Covina Fruit Ex	2.85
Green Crown st A. C. G. Ex	2.70
Red Shield xc A. C. G. Ex	2.70
Blue Seal xf A. C. G. Ex	3.15
Lochinvar ch R. H. Ex	2.75
Gold Buckle xf Riverside Ex	3.15
Victoria xf Riverside Ex	3.10
Our popular xc F. H. Speach & Co.	2.75
Standard	2.80
Mill Creek ch Crafton O. G.	2.85
Crafton fy Crafton O. G.	3.05
Flower fy F. P. Corson	2.85
Golden Eagle st C. C. Chapman	2.85
Old Mission fy C C Chapman	2.90
Old Mission fy C. C Chapman	3.15
Gabriella, fy Independent F Co	2.90
No name fy L. R. Curtis	2.90
Clover xc Redlands O G Assn	3.00
Rose xf Redlands O G Assn	3.15
Orchard o r National Orange Co	3.35

THOMPSON IMPROV'D NAVELS

Green Crown st A C G Ex	$2.70
Red Shield xc A C G Ex	2.95
St. Bernard	2.90
Orchard or National Orange Co	3.55

TANGERINES

Orchard o r National Orange Co	$2.75
Flower fy F. P. Corson	2.35

GRAPEFRUIT

Lochinvar ch R-H Exchange	$3.10

LEMONS

Santa Fe st Moffatt Fruit Co	$3.05
Fountain ch Moffatt Fruit Co	3.15

BLOODS (FULL BOXES)

Hollywreath fy C. C. U. Lindsay	$3.00
Mistletoe ch C. C. U. Lindsay	2.80

BLOODS (HALF BOXES)

Hollywreath fy C C U Lindsay	$1.60

New Orleans Market

NEW ORLEANS, Feb. 27.—Three cars were sold at auction yesterday.

NAVELS

Yacht st S. B. Co Fruit Ex	$1.85
Tallyho ch S B Co Fruit Ex	2.35
Carlo st San Antonio Ex	2.95
Plain End, San Antonio Ex	2.45

LEMONS

Pico st Semi-Tropic Ex	$2.60

Local Citrus Movement

Shipments of citrus fruit from Southern California for February 25 and 26 consisted of 211 cars of oranges and 9 cars of lemons. This makes a total for the season of 9193 cars of which 1007 cars were lemons. To the same date last season 9619 cars were shipped, of which 764 cars were lemons.

A. Dodd, of Alhambra, advertises navel orange trees in this issue.

Down near the town of Corcoran there has been started an industry, which will no doubt be a success. D. W. Lewis is engaged in planting 480 acres to asparagus. The roots are shipped to Corcoran in refrigerator cars, and are planted in the same manner as potatoes, and are covered by machinery. It will be three years before Mr. Lewis will receive any returns from the crop, but it is said that the profits will be great when the returns come in. It is said that a large tract of sugar beets will also be planted in that section this season.—Hanford Sentinel.

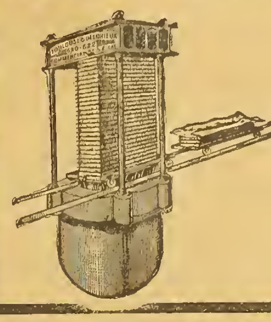
The Pajaronian says the Codling Moth will be given a harder battle in Pajaro valley the coming season than ever before. Orchardists are determined to grow clean fruit and this be accomplished only through judicious care of orchards.

LARGE CANCER IN EACH BREAST

IN WOMAN'S BREAST, ANY LUMP IS CANCER

GREENVILLE, ORE., Feb. 26,'06. Mrs. F. June Wright, a prominent resident of this place, has just been cured of very large cancers of both breasts and armpit, with only two weeks' treatment, by the use of that most wonderful island plant remedy used by Dr. and Mrs. Dr. Chamley & Co., of 25 Third street, San Francisco, Cal. All the leading papers and scientific journals have been full of reports of their almost miraculous cures. Honesty is their policy; they treat every case personally, without knife or pain, charge nothing until cured, and offer $1000 if they fail to cure any cancer they treat before it has poisoned deep glands. They have probably the best book ever printed on cancers; sent free to those who describe their cases. It contains proof that any lump in woman's breast is cancer; also, that any tumor, lump, or sore on the lip, face, or anywhere six months is cancer. Dr. Chamley is declared by his patients to be one of the most honest and conscientious doctors they ever knew. He is the best authority in America on the cure of cancers, having cured more in thirty-three years than any other doctor living.

WINE AND OIL MACHINERY



A SPECIALTY

Presses for All Purposes.
Complete Plants Fitted Out.

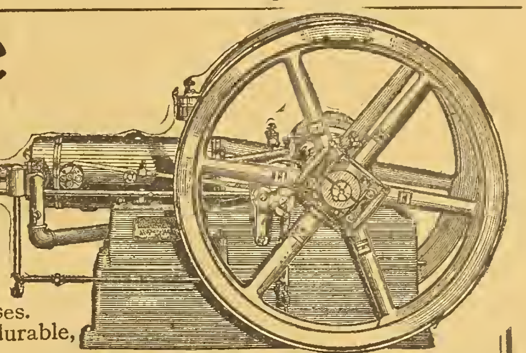
TOULOUSE & DELORIEUX
618 Commercial St. San Francisco
Catalogue Upon Application

RUBEROID ROOFING

The peer of all with 14 years' record for durability and efficiency.
Cheapest because best.

BLAKE, MOFFITT & TOWNE
Both Phones 679 242 to 248 So. Los Angeles St., Los Angeles, Cal.

Gasoline Engines For Irrigating.



THE I. H. C. Gasoline Engines are especially adapted for irrigating purposes.

They will be found safe, durable, simple, and economical.

With maximum power, they can be operated at a minimum expense.

Expert knowledge or previous experience not required to operate them.

They can be attached to any kind of pump in any position, for raising water from deep or shallow wells, reservoirs, canals or running streams.

They excel in **full, regular and long sustained power.**

They can also be used for a general purpose engine for sawing wood, churning, cream separating, feed grinding, etc.

They are unequaled for power of all kinds.

Made in variety of sizes and styles:

Vertical—2, 3, 5 Horse Power.

Horizontal—(Portable and Stationary), **4, 6, 8, 10, 12 or 15 Horse Power.**

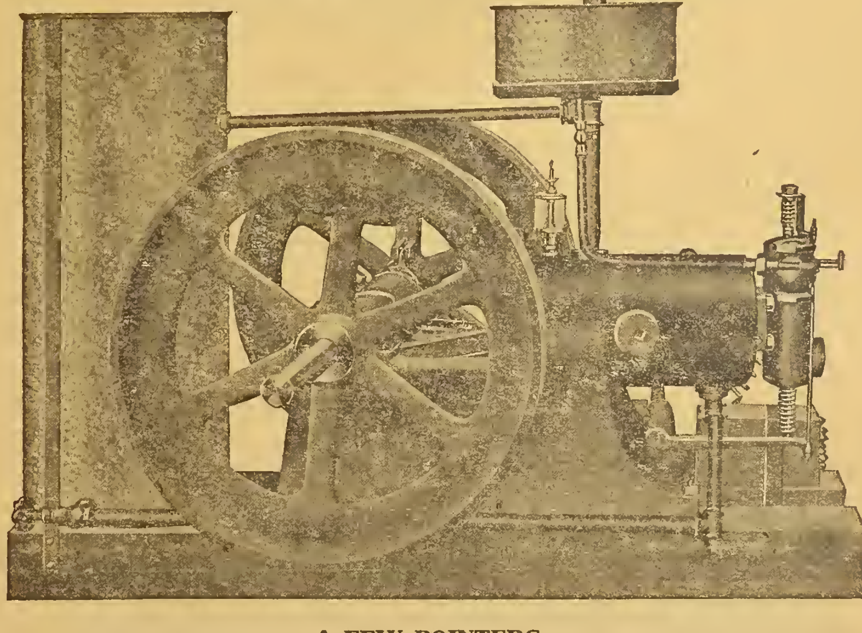
An engine of this description, with a suitable pump, makes agriculture a success where it would otherwise be impossible.

Call on local agent and examine these engines or write nearest general agency for illustrated catalog.

WESTERN GENERAL AGENCIES: Denver, Col., Helena, Mont., Portland, Ore., Spokane, Wash., Salt Lake City, Utah, San Francisco, Cal.

INTERNATIONAL HARVESTER COMPANY OF AMERICA, CHICAGO, ILL.
(INCORPORATED.)

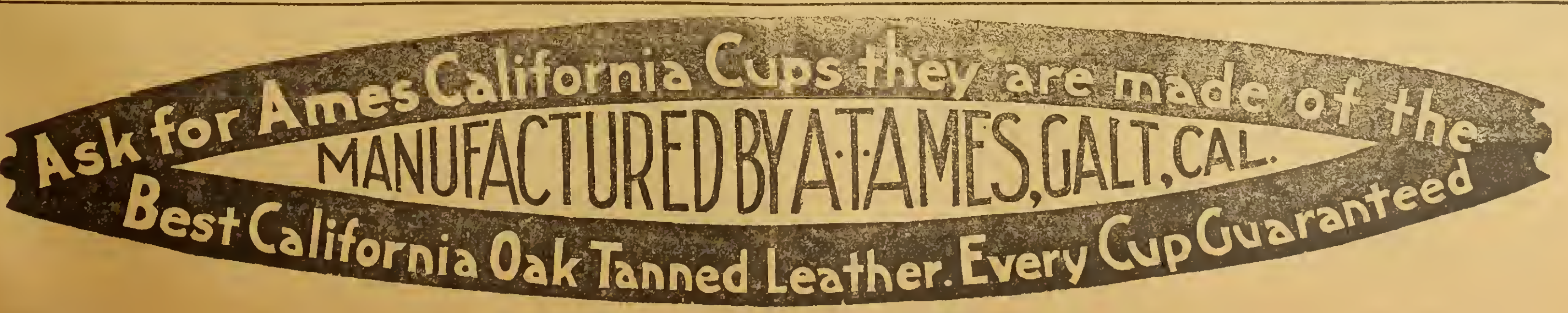
A Sure-Go Gas Engine



A FEW POINTERS

Compare it with other makes; note its strength and simplicity. No gears, few working parts, and nothing to get out of order. We can safely say we have the Acme of mechanical simplicity. We use but two valves, both vertical and of poppet type. Our governor is very sensitive and made of few parts. We furnish electric ignition, absolutely positive, of a sure kind and only makes a spark when needed. Time of ignition can be changed when engine is in motion. Gas and air mixer is extremely simple, very substantial, and has no delicate parts. It has but one valve controlling both air and gasoline. A good gas and air mixer means a saving of fuel. You get this saving in fuel when you buy a Wagaman Engine. Write for descriptive circular.

ALDRITT & WEAVER, Sole Agents, 115 N. Broadway, Los Angeles, Cal.


Ask for Ames California Cups they are made of the
MANUFACTURED BY A. T. AMES, GALT, CAL.
Best California Oak Tanned Leather. Every Cup Guaranteed

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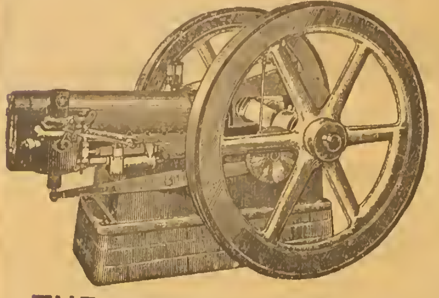

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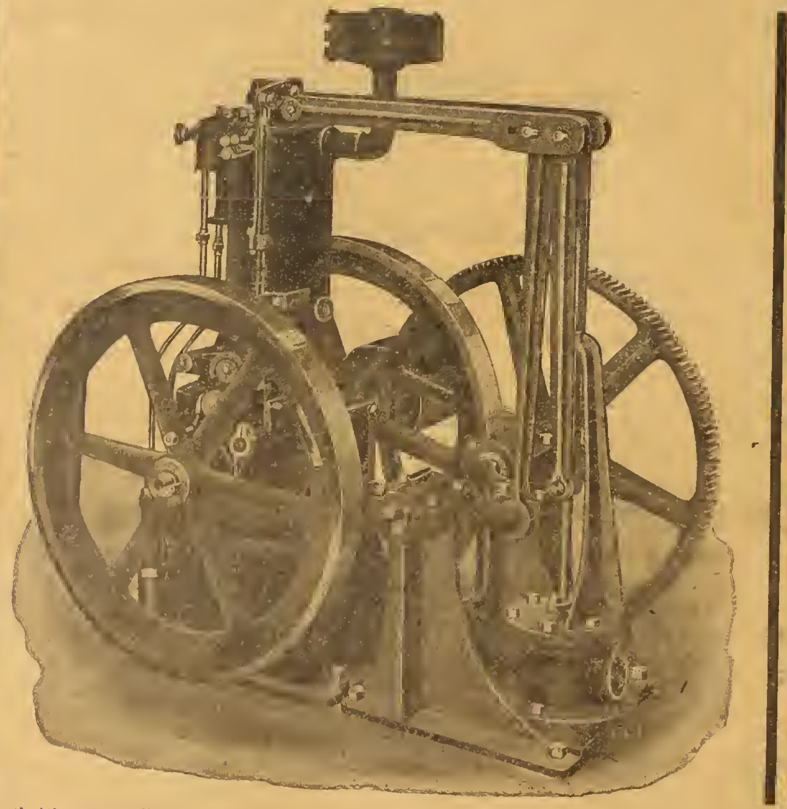

That's it's name. Little wonder it is that that is its name and that it is so exceedingly popular It's cheap. It's effective. And it's so handy and always ready. Runs the pump, the cutter, the grinder, the churn—any old thing on the ranch. Look it up right away, because you will be interested.

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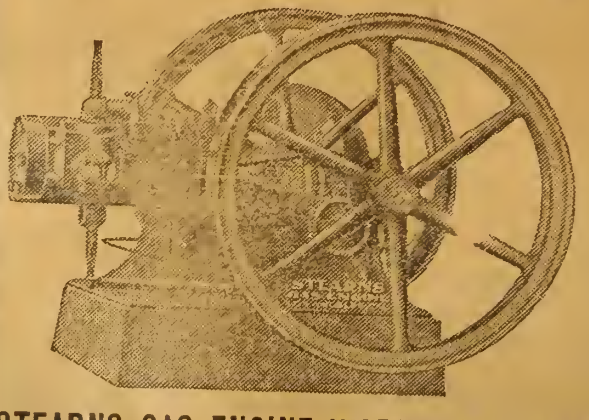

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ASK WELL PIPE MANUFACTURERS FOR THE VULCAN STARTERS. WE HAVE ALL SIZES.

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The New Pomona Pump

We must not attribute all of the success of the Pomona Pumps to the Pump Head or the part of the machinery above the ground, for there is another part just as essential, and this is the cylinder and valves. Our cylinders are made of the best seamless brass tubing made to our order in the East. The valves are made of the best phosphor bronze and are cast and finished complete in our shop.

These valves are of the most improved pattern, have cone-shaped clappers with ground metal seats. There is only one moving part in each valve and we have never had them clogged with sand. The plungers are furnished with three cup leathers, each made from the best oil tanned leather.

With the New Pomona pumphead using a quick return motion and lap in the plungers, these valves have sufficient time to seat before taking up the load of the water column, consequently there is no hammer or jar. The Pomona Pumps are taking the lead for irrigation purposes and are rapidly displacing pumps of inferior design and workmanship.

Send for catalog and estimates for our new plants.

Pomona Mfg. Co.
POMONA, CAL.

When writing to Advertisers Please mention Cultivator

CALIFORNIA CULTIVATOR

DEVOTED TO AGRICULTURE IN ALL ITS BRANCHES

LOS ANGELES MARCH 9, 1906 SAN FRANCISCO

Diversified Products of San Joaquin County

Loading Grain at Stockton

Thoroughbred Holsteins

Drying Fruit

In California they do things on a large scale. You see flocks of poultry roaming on hundreds of hillsides as well as in the valleys, and on these hills are large poultry farms that are about a mile square, and the poultry houses are in colonies scattered throughout the fields.

The above is a bird's eye view of Mr. M. Sartori's Poultry Farm near Tomales. For the last two years the laying hens have been fed daily on Coulson's Mash Egg Food and Coulson's Chick Feed, 350 bags at a time. (About 5 wagon loads.)

Chicks, 2 Cents Each

Took from the incubator 831 chicks—fed them entirely on Coulson's Special Dry Chick Feed until 5 weeks of age—they ate 400 pounds of Chick Feed—nothing else—cost less than 2 cents per chick to feed them entirely on Coulson's Special Dry Chick Feed up to 5 weeks of age.

O. P. H., Petaluma, Cal.

Ask Your Dealer For It. Feed It One Year

M. SARTORI

After we left the seaside we drove along at a lively gait through the valleys and canyons toward Petaluma and we very much enjoyed the scenery of beautiful rugged nature, for this country is wild and mountainous. and wherever we could see in the distance around us, we could see the foothills, or what may be called young mountains. As we were driving along we noticed that on some hills there were hundreds of cattle ranging, and on other hills were large flocks of sheep; but on the majority of the hills around us, and in the distance we could see groups of little white-washed poultry houses scattered a few hundred feet apart. At each group of these little buildings there was a colony of several hundred laying hens of the White Leghorn variety, and as we drove past them, we could hear them singing about Egg Food for hens; for they all wanted it, and if some of them did not get it, it was because their owners were too selfish and too blind to all interests of their fowls to give them what they so much desired, Coulson's Improved Egg Food, that makes hens produce $4.00 worth of eggs in a year.

The above illustration represents a photographic view of M. Sartori's 700-acre Dairy and Poultry Farm, fourteen miles from Petaluma. For more than two years Mr. Sartori has been feeding his laying hens Coulson's Mash Egg Food, once a day, and any one driving along the road will be surprised to hear the noise this great flock of hens do make. All day long they are cackling and singing and laying eggs, and they are probably talking to each other about how good Coulson's Improved Mash Egg Food tasted to them, and how many eggs they were going to lay, and who could lay the biggest eggs and the most eggs that year. It's no wonder that Mr. Sartori can come to town twice a week with a whole wagon-load of eggs.

The other illustration was a view taken four miles from Petaluma, on the road to the Sartori ranch, and shows the way Mr. Sartori buys Coulson's Egg Food for the pullets and hens and Coulson's Chick Feed for the little chicks.

4 Cents a Month

Reader:—You can feed a hen Coulson's Improved Egg Food once every day for 4c a month. Can't afford that? Why, two eggs a month will pay for the feed, and when you get 15 to 20 eggs from a hen in a month, think of the money you will make by feeding Coulson's Feed.

The above picture was taken on O. P. Hall's poultry farm, showing one of the broods of young chicks then three weeks old, raised on Coulson's Special Dry Chick Feed, at a cost of 1c per chick for the first 25 days.

Mr. Hall will raise a few thousand pullets this year, to stock up his 100-acre poultry ranch. Another lot of 1500 chicks has just been hatched and the five incubators will be set several times more this season. Mr. Hall buys Coulson's Special Chick Feed in ton lots.

Coulson's Improved Egg Food Starts the Egg Machine

As seen from Middle Two Rock Road, four miles from Petaluma. By looking closely, you will notice the many small poultry houses. Each one is occupied by hundreds of chickens. The teams that you see are loads of Coulson's Egg Food and some Coulson's Special Dry Chick Feed, going to the different Poultry Farms, some of which buy a carload of Coulson's Foods at a time; for instance, M. Sartori, Geo. W. Gaston, A. D. Rezendes, W. W. Freeman and others, who have 5000 laying hens or more.

Coulson Poultry and Stock Food Co.

Petaluma, California

CALIFORNIA CULTIVATOR

Vol. XXVI—No. 10 LOS ANGELES, CAL., FRIDAY, MARCH 9, 1906 Subscription $1 a Year

Marketing Outside of Transportation Lines

By A. N. Judd

In marketing farm and orchard products the difference in the method of presenting them to the consumer from that followed by the manufacturer is most marked.

A mighty army of agents and salesmen travel to the ends of the earth, dictating the prices of manufactured goods for the consumer to take or reject as he pleases. This work is done at the enormous annual cost of more than $20,000,000. Yet the farmer and the fruit grower with their products of the almost inconceivable yearly value of five billion dollars, have never yet dreamed of fixing the price on their products, but wait patiently for an offer that they are bound either to take or make no sale.

The year book of 1904 makes this comparison: "All the gold mines of the entire world have not produced since Columbus discovered America, a greater value of gold than the farmers of this country have produced in wealth in two years. This year's product is over six times the amount of the capital stock of all the National Banks; it is twice the sum of our exports and imports for an entire year; it is two and one-half times the gross earnings of all the railroads; it is three and one-half times the value of all minerals produced in this country, including coal, iron ore, gold, silver and quarried stone."

Notwithstanding the above showing, the farmer and fruit grower appears to think that his business is not of sufficient importance to justify his making his own markets. This is the case in the whole United States, it is even so in the Pajaro Valley in regard to the apple industry. The apple grower there, with few exceptions, turns his product over to an agent and oftentimes to an agent of an agent, who will not buy even, if the name of the grower or the name of the place grown is on the box. This results in our having received this season from eighty-five cents to a dollar fifteen per box for fancy four-tier Bellefleurs and Newton Pippins, the equal of which does not exist as regards quality.

Over two million boxes is the apple crop of the Pajaro valley this year. Think it over, fruit growers of the State. Let us, as an experiment, set aside for next year's business one cent a box of all deciduous and citrus fruits to exploit markets of the world. This would be enough to put agents at a big salary into the field at home and abroad. By so doing, we can establish, to a certain extent our own prices and secure the best and cheapest cold storage. Freight rates would also be much less, for we would do our own routing and dictate car service, do away with rebates and discriminations, thus creating transportation competition.

Extended markets cure glut and afford us a remedy for over-supply.

The nature of our products and the increased production of the same, demand constant extension of market in order to prevent commercial orcharding becoming folly.

According to the report of the United States Secretary of Agriculture, the export of apples to France in 1904 consisting of two hundred carloads, was twelve times greater than the average shipment of the previous five years.

He says that when the French become accustomed to our varieties of fruit and method of packing, their markets will become an important factor in the export apple trade. If the efforts of our representatives in France can in one year multiply the apple market twelve times, what should the grower be able to accomplish if working in his own interest?

To further accentuate the importance of co-operative action in extending our market, to say nothing of the great good, as well as profits that would accrue, I again quote from the year book, 1904, showing an "increase of apple exports from one per cent of the apple crop of 1899 and 1900 to four and three-fourths per cent of the crop 1903, 1904 equalling two millions eighteen thousand two hundred sixty-two barrels."

An investigation made by the Department of Agriculture shows that fruit intended for cold storage should be handled with the utmost care, in picking, packing and shipping and stored quickly after picking in well ventilated rooms in a temperature of thirty-one and one half degrees F.

I wish to further impress upon the grower the necessity of marketing his own products, if for no other reason than to correct the vagaries of apple buyers, and this is true of all fruits. The taste is the growers test of the quality of an apple, while the city man is influenced by the eye wholly, and in consequence, seldom eats a good apple. But as the city buyer represents our market we should try to influence him to buy by the taste, for apples and all other fruit must be consumed in greater quantities in order to sell in greater quantities.

Who but the grower should show the buyer the difference between those kings of the royal family of fruits, the Yellow Bellefleurs, the Newton Pippin and the plebeian Lauver and Ben Davis?

To show how serious this question is: At the Louisiana Purchase Exposition, apples were judged on one hundred per cent basis, and only nineteen per cent credit is given to taste, while eighty-one per cent was given to looks. In fact, all awards in all kinds of fruit, the eye awarded at least seventy-five per cent of the honors, and the taste less than twenty-five per cent.

This calls for action on the part of the grower and further illustrates the necessity of attending to at least a part of our own business.

While red apples are pretty for decorative purposes, it is the fragrance and flavor of the Yellow Bellefleur, Newton Pippin and White Winter Pearmain that tickles the palate and appeals to the nostrils, and so creates a constant demand for more of the same kind.

The Hood River grower of Oregon has shown us the way to co-operate; shall we follow his lead and go him one better or shall we accept half price for our products?

Organizing Against Plant Diseases

By Prof. R. E. Smith

We must assume at the outset a consideration of this subject only as it applies to California, since even with this limitation I can present but the briefest outline of what is being done or what might be done along the lines suggested in my subject. Plant Pathology and Economic Entomology have come to be two of the most important phases of Botany and Zoology in relation to the production of crops. Pests and troubles have multiplied with the increase in plant production, until it may almost be said that every important crop has its serious enemies. It is the means of suppression or control of these pests, diseases, and enemies which concerns the Entomologist and Plant Pathologist. Economic Entomology has far outstripped Plant Pathology in California owing to the variety and pernicious activity of insect pests in the State and the manifest nature of their injuries.

The diseases with which the Plant Pathologist is supposed to deal, include broadly all troubles with plants other than those caused by insects. These may be parasitic troubles, such as fungus or bacterial diseases, or the injurious effects produced by unfavorable conditions. Both classes are frequent, destructive, and comparatively little understood in this State. Each of our important fruits has its serious troubles, its blight, scab, rot, or "die-back;" farm crops and vegetables have their rusts, smuts, blights and mildews; our flowers and ornamentals struggle with similar enemies. Some of these diseases are well known in their nature and method of treatment, but others of the most destructive are absolutely unchecked from want of knowledge. Many of them present most obscure problems for getting at their real nature in a manner which must be both technical and practical. I intend in this paper to point out the lines along which the most practical benefit may be obtained in this direction.

In order to develop means for controlling any plant pest successfully we must have four things; Investigation, experimentation, demonstration, and application. The specialist must first investigate the nature and cause of the disease, he must then experiment along whatever lines suggest themselves, with the object of finding a remedy or method of treatment. Having found a promising method he must demonstrate that the treatment is practically successful. This being accomplished the method must be generally applied by the various growers.

In this State we have several agencies available for accomplishing these results. First of all the grower himself must watch his crops for the appearance of disease and try the application of such remedies as are suggested to him. He may also be able to experiment to some extent. The State and County Boards of Horticulture are most important agencies for the control of diseases as well as insect pests. They can aid greatly in many ways. The United States Department of Agriculture often lends its aid in various ways, giving the State the benefit of its specialists and their work. The Agricultural Experiment Station should in every state be the center of scientific investigation as applied to agriculture. The investigation of plant diseases is the province of the Plant Pathologist of the Station. He must endeavor to lay bare the whole course, nature, and cause of every serious disease; he must experiment for a remedy, and endeavor to demonstrate and apply his results, using and co-operating with all the available agencies which may aid in the work.

Without further discussion of the need of organized effort against plant diseases, or the forces available for the work, I may mention some of the undertakings now being carried on by the Department of Plant Pathology at this Experiment Station along these lines. The pear blight work is largely one of demonstration and application, the investigation having been previously done by the U. S. Department. The last legislature made nearly $10,000 available for this work, which is being done jointly by the pear growers, the State and County Boards of Horticulture, the University Experiment Station, and the United States Department. Eight men are now in the pear orchards on this work, showing and demonstrating to the growers the best methods of fighting the disease.

The lemon rot investigation represented an organized effort between the Station and the Southern California lemon growers to find a way to control a very serious decay of their fruit, which cost single growers over $10,000 last year.

The walnut blight investigation was provided for by the last legislature, and is being organized in connection with the walnut growers of the affected sections.

A beet blight investigation is in progress, promoted by the sugar beet interests. Great losses have been sustained from this source.

Various other work is in progress, but these are typical of organized, systematic work on very serious problems. It is hoped to take up other plant diseases of importance in the same manner, as circumstances and resources will allow.

Deciduous Fruit Culture

BY J. W. MILLS, POMONA, CAL.

ROOT KNOT

Root knot is a disease that some of our newly acquired fruit growers are not familiar with, and planting time is the time to begin right with it. Keep a sharp lookout for knobs on any kind of a deciduous fruit tree, or almond and walnut trees. Often there will be seen knots on the roots that are no more than an abnormal growth of healthy tissue. This may be easily identified by cutting into it with a pocket knife. If the bark on the knot and the wood under the bark are the same in texture and appearance as the normal part of the root there need be no fear that the odd looking growth will do any harm. But if the knot looks like a wart and cuts like a wilted potato, you want to burn the tree, especially the root.

There have been several theories advanced concerning the cause of this disease, but there have been no practical suggestions offered as a remedy. The only theory that we have heard that has a glimmer of hope for a relief, is that it may be a constitutional weakness in the tree that allows the knot to grow. If that is true, it may be that a variety will sometime be brought out that will be resistant to the disease. However, we doubt that. It is likely, however, that the disease may run itself out, that is, in time lose its virulence. This is not a theory; it is an idea.

Prof. J. W. Toumey, formerly of the Arizona experiment station, found that the peach was more free from the disease than almond, apricot, or plum. It is also generally supposed that trees grown on pits taken from seedling trees are less liable to have root knot than trees on roots grown from seedling pits. This point is sometimes advertised by nurserymen. We would rather have roots from seedling pits. on general principles, but would not expect them to be more free from root knot than any other roots.

A few years ago, we had occasion to need 100 seedling trees and secured sprouted pits from a local nurseryman. He obtained the pits from some old seedling trees that were growing in an old Spanish settlement near Pomona. The nurseryman kept his seedbed in the usual way and picked over the pits as they sprouted and planted them. We did not get our pits till late and they were among the last to sprout. The nurseryman had practically no root knot on his trees, and ours, which were planted in soil where no tree had ever been planted before, had 80 per cent afflicted with root knot. This would seem to show that trees grown from pits with the most vitality were least liable to have the disease, and that trees having been grown on stock from seedling pits is no guarantee that they are more hardy from a root-knot standpoint than trees grown from pits from budded trees. This fact was further emphasized not long since when a grower near Pomona brought us some young apricot trees that had grown but one year in the orchard. They were budded on stock raised from seedling pits and had made a magnificent growth. They were as healthy a lot of trees as we ever had seen, except that they had from ten to fifteen knots each on the main roots. There were places on the roots which showed that injury had been done to them before planting and had healed, but there were no indications of root knot ever having been present at those points but there were a dozen knots on other portions of the root system. The knots had started some months after the trees had been planted. We have never seen a knot (gall knot under discussion) growing where or near where a root had been cut off at planting time.

* * *

MALAGA GRAPES

We have just received a marked copy of the Brawley News with the request that we answer it. The marked paragraph is as follows: "I have observed in the California Cultivator in the question box where an Imperialist has been asking whether Malaga grape is a good grape for this country, that he would put out 80 acres of them. An answer in the Cultivator warned this man not to do it as it was very expensive".

We regret that the gentleman did not get the idea as we presented it. The man who asked us the question was in grave doubt as to the advisability of planting 80 acres all to Malagas. We advised him not to unless some local demonstration warranted such an enterprise, warning him that one or two seasons do not prove to a certainty that a certain crop is always going to be the best or will always pay. We take this view from our own experience in farming. We also took the pains to investigate the question of growing certain varieties of grapes in the Colorado desert region. We had heard of the immense profits derived from two-year-old vines. The vines had surely made a phenomenal growth and they had produced a crop that was equally astonishing in size. We also found that the following year was not a favorable one, and, it being very hot, a number of the vines had died, and but a very small crop had matured and that was quite inferior in quality. Last summer was a favorable season for grapes in the desert regions and good reports are given. But the industry is young and we do not believe that the grape question is at all settled as yet. There are experimental plots in which a large number of varieties of grapes are being tested. These tests may be made in a small way by the farmer, but we will repeat that it is expensive for the farmer to experiment on a large scale. We hope that the Malaga will prove one of the banner grapes in the Imperial valley as we have friends there who are putting money in improvements and are counting on this prage.

* * *

SPRAYING GRAPE VINES

It will be found profitable for grape growers in sections where mildew has been, to spray with bluestone water just before the buds swell. Make the solution one pound of bluestone to ten gallons of water. Wet the entire plant with this, also the ground beneath and for a distance of a foot around the trunk of the vine. This will destroy all the mildew spores that have collected in the bark and near the surface close to the vines. By following it up with sulphur as soon as the blossoms have dropped and again when the grapes are about the size of sweetpea seed, there will be very little, if any, mildew.

The great difficulty in preventing mildew from getting a start in the coast valleys is due to the moist and cloudy weather that sometimes prevails just when the fungus is starting. Sulphur acts only when the weather is warm enough to volatilize part of it. The bluestone puts a quietus on the greater part of the disease seeds and if the weather is too cool to make sulphur work right, it does not make so much difference.

* * *

OCHRUS PEAS

Editor Cultivator.—Can you tell me where I can get the Ochrus pea for seed? I have been searching for it among the seedmen and others and they know nothing of it. Please give me what information you can about the seed and its summer and winter uses, and confer an appreciated favor.
A. E. N., Burbank.

We do not know where you can get any seed of the Ochrus pea and doubt if the seed can be had in quantity. You may find out perhaps, by writing to Prof. A. V. Stubenrauch, at Riverside.

The plant makes a good spring growth, but very little during the winter months. Two years ago at Riverside, it produced 33 tons of green stuff per acre. The Tangier pea growing beside it produced 46 tons per acre. Two varieties of vetch averaged 24 tons and Fenugreek produced 14 tons per acre. Peas produced about 25 tons.

Orange county is preparing to make the most of the city and county scheme in Los Angeles whenever it is worked out. An active campaign is being carried on in the territory contiguous to Orange county in favor of annexation to that county whenever the breakup comes.

We sell country lands. CHATFIELD & VINZENT, 228 Montgomery St., San Francisco, Cal.

Plant Loganberries

For profit. We are prepared to purchase the fruit and, in fact, all kinds of small fruits, even if too ripe for other uses. If you have

Culled or Unmarketable Oranges and Lemons

it will be to your best interests not to sell to peddlers, but to dispose of such fruit to the

Sherman Concentrated Fruit Co.
427 N. Anderson St., Los Angeles, Cal.

900 Thrifty Walnut Trees
FOR SALE
From 2½ to 8 feet in Height
W. W. ALWARD
Central Avenue, 2nd House South of Slauson, Los Angeles, Cal.

THE VERNON NURSERY
4524 Central Ave., Los Angeles, Cal.
A Good Stock of first class Seedling Soft Shell Walnuts yet on hand.
Phone: South 1105 A. YARNELL, Prop.

PLANT THE . .
Lob Ingir Smyrna Fig

This is the world-famed **Fig of Commerce.** $15.00 per 100. We also have a large stock of IXL Almonds, French Prunes and Bartlett Pears. Write for prices.

Maywood Colony Nursery
W. Herbert Samson, Prop. Corning. Cal.

GRAPE VINES
25,000 Missions, 3,000 Muscat, 3,000 best varieties for table and shipping. All first-class vines, at wholesale prices.
I. S Ingham, Highlands, Cal.

Apple Trees Grafted Walnuts
The largest stock of home grown Apple Trees in So. California. W. W. Pearmain, Yellow Bellefleur, Arkansas Beauty our specialties. 300 Grafted Walnut Trees on Eastern black root, 7 to 10 feet. Seedling Santa Barbara Soft Shell Walnut Trees and assortment of Peach, Pear, Plum, Apricot and other deciduous stock.
Home Phone 644 Eureka Nursery Co., Downey, Cal.

TREES!
80,000 Apple Trees in 42 Varieties. Extra well rooted. Clean. Grafted on whole roots and free from all pests. Also an extra fine stock of Prunes, Pears, Plums and Walnuts. Write for price list. ***A. F. Scheidecker,*** Proprietor Pleasant View Nursery. ***Sebastopol Cal.***

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IMPORTERS OF
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AND
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WRITE FOR PAMPHLET AND PRICES

Mulberry Trees
Six varieties for Silk Producing and Fruit Berries. Special attention is called to the Morus Nigra, a Persian variety especially for fruit. Also to the Japanese Mulberry, a variety generally used for silk culture.
I am also prepared this year to furnish 10.000 Rooted Grape Vines, following varieties: Flaming Tokay, Black Malvoise, Black Prince, Cornichon, Sable Kanski and Muscat. I have also some very fine Orange Quince Trees and Pomegranates. Send for descriptive circular free by mail.
R. P. LAWSON, 252 No. Avenue 21, Los Angeles, Cal.

GEO. B. WARNER'S
Orange County Nurseries
Choice line of Orange Trees, consisting of Valencia Late, Wash. Navel, Navelencia, King Tangerine. Eureka Lemon, Budded Loquat, Blue Gums, Red and Sugar Gums, large stock Soft Shell Walnut trees 3 years old, Grafted Walnuts, Palms, Shrubbery, and general line of deciduous fruit trees. Write for price list.
Est. 1889. SANTA ANA, CAL.

Apple Trees
5 to 7 feet, one year old, $20 per 100. Grown in Riverside. Clean and healthy. ***Cornichon Grape Vines,*** $25.00 per 1000.
Jurupa Nurseries, Riverside, Cal.

Grafted Walnut Trees
LARGE GENERAL NURSERY STOCK
IT WILL PAY YOU TO GET OUR PRICE LIST BEFORE BUYING
Orange County Nurseries, Fullerton, Cal. Phone Red 151

WALNUT TREES
Grown from carefully hand selected seed. Best lot of trees in California. Come and look them over. On March 1st have enough 6 to 8 foot trees left to plant three 40-acre plots. A few other sizes. Come quick to see these **best** trees. Postal gets prices.
A. A. Mills Anaheim, Cal.

Dried Ground Tankage
THE BEST AND MOST ECONOMICAL FERTILIZER
ANALYSIS { 10½ per cent Ammonia / 18 per cent Bone Phosphate }
WRITE US FOR PRICES AND PARTICULARS
Western Meat Company - - San Francisco

Practical Farm Science

BY PROF. A. J. COOK

FEED THE BEES

The pregnant and timely rains which surely give promise of more to follow, may make us reasonably hopeful of a good honey year, so far as the needed rain supply goes. No bee keeper should fail to see that his bees are all in condition to reap to the fullest from the prospective harvest. Although the rains of a year ago were generous and ample, the season was not a good one for bees or honey. Cold damp weather and trying winds either forbade the secretion of nectar by the flowers or else held the bees to the hives, so that in many sections the harvest was most disappointing. If for this reason or if so much honey was taken from the bees, that their stores are depleted, then they must be fed. Without a question the greatest loss suffered by California bee keepers comes from failure to supply the bees with the needed food to prevent starvation. The frequent years of no honey not only robs the hives of the needed food, but also makes the bee keeper incautious or neglectful. Yet with the good seasons comes such a flood of honey that no bee keeper can afford to neglect this attention, and when necessary the proper feeding. Often a dollar thus spent will save a colony, and very likely secure a harvest of from ten to twenty dollars the following year. We may also remember with great profit that the sugar factories sell a cheaper sugar that is perfectly safe and wholesome for the bees. This should be secured surely when any considerable feeding is to be done.

* * *

THE CODLING MOTH

We are now buying apples here in Berlin, that come from Canada and the United States. We pay from one and one-half to five cents each for them. It is quite common for the dealer to sort this fruit, putting the defective in one box and the sound in another. He then sells the better fruit for from one to five cents more a pound. I find that in most cases the codling moth has caused this loss often almost wholly. As long as we now have so good a remedy against this pest should we not all use it and not produce and market "wormy fruit?" This is the time when the apple grower should see to it that his apples are free from this defect. Let us all remember that good arsenites applied as soon as the blossoms fall from the trees, one pound to 200 gallons of water, with four or five pounds of freshly slaked lime added, and applied so thoroughly that every apple is treated will do very much to give us sound fruit. A second application three weeks later will make the remedy more complete; while some orchardists think it wise to apply three and even four times. Every apple grower should send to the University at Berkeley for the Bulletin on spraying, and keep it ever in sight, that he may not only fence against the codling moth, but also against the blights and scab as well.

* * *

THE CLUBS

I am glad that the Editor calls attention to the value of club work for farm, garden and orchard. There is no one thing that will begin to pay as well as a thoroughly alive farmers' club, which embraces in its membership all the community. In some of the states these clubs have attained a marvelous growth and influence, only because the people appreciate their value and neglect almost anything else before they slight them. This insures the best work on the farm, the best up-to-date methods the best social relations, and all needed attention in way of securing proper legislation. In some States these clubs have been fairly revolutionary in their work and influence.

At these clubs the social feature is kept to the fore front. At each meeting a full meal is served. This is provided by the host of the day, which as there are often nearly or quite 100 present, is no mean task. Yet it comes only once in one or two years, so one can afford even this big effort, and all enjoy it most thoroughly.

Inspection of the farm where the meeting is held, and a very rich program aid greatly to enhance the value and influence of the club. In these clubs they discuss everything except religion. Even political views are well threshed out, and all enjoy it. In some of these clubs the organization owns the dishes, the lapboards and the folding chairs. These are housed and cared for by the one where the meeting is held, until a day or two before the next meeting, when the one who is to entertain the club goes for them. These clubs have been flourishing for years, and have done wonders to advance the agricultural interests in the respective neighborhoods. I wonder if this "love feast" each month, where there is so much of good fellowship and kindly sympathy has not had great influence in keeping the club interest at white heat? One big meal for the community a year is not too much, if it tends to unite all in good fellowship, and to promote the best good of the community. Indeed they have studied this matter of refreshment, and do it so scientific a way that the labor and expense are minimized. Although the meals are superb, yet more than one good house wife has said they do not mind the labor or expense. Every one in the club takes part on the programs, and they develop a power little expected in very many. . At tables, they generally sit in long double rows, and each four or six holds a lap board in the lap, which serves as a table. Everything shows thought and is done decently and in order.

I knew a man some years ago, who spent not a little money in making a half mile model road in front of his farm, and then put up close beside a full description of how it was made, cost, etc., etc. Of course this object lesson was most effective and soon there were miles of such road in the neighborhood. I wish some one—some enterprising community in California—would try this club plan as described above. May be they would become as great philanthropists as was this road builder.

Consul Hamm, of Hull, writes that letters received by him suggest that a trade in honey might be built up between that city and the United States. Considerable honey is produced in Yorkshire, but not enough to supply the market, especially at the present time, as the product this year is way below the average. There are small direct imports made, and more comes by the way of London and Liverpool. The ruling price of California honey in Hull at the present time is about as follows: Wholesale, $6.80 to $10 per 112 pounds; retail, 16 to 36 cents per pound; free on board, $3.80 to $9.75 per 112 pounds. It should not be understood that there is an extraordinary demand for honey in this neighborhood, but a limited amount of a good article rightly placed might find market.

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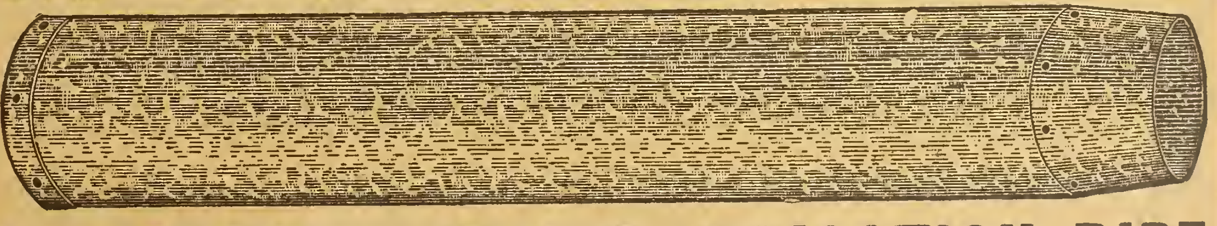

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California Horticulturally

BY JOHN ISAAC, SACRAMENTO, CAL.

IMPORTATIONS OF NURSERY STOCK

It would seem that our California nurseries should produce stock enough to supply the home demand, but it seems that they are unable to do so, and every year sees the importation of eastern and Oregon grown stock increasing. This season the importations of nursery stock from the outside have been the heaviest ever known, peaches, plums, and apples being the principal varieties, peaches leading by long odds. For the past three or four years the local nurseries have been unable to supply the demand for peach stock. This is to be regretted, as we are sending money away that should be kept at home, and this is the smallest objection. It is almost impossible to trace the locality in which much of this eastern stock is grown, and there is always great danger of introducing serious diseases with it. In many parts of the east peach yellows, rosette and little peaches are prevalent, any one of which is as serious among peaches as is the Anaheim disease among grapevines or the blight among pears. The introduction of any one of these diseases might prove fatal to one of our greatest fruit industries. There are also many pernicious insects in the East which we do not want in California and which there is danger of introducing with this stock, even with the greatest care. It is to be hoped that our California nurserymen will get to work and propagate enough peach stock to supply the local demand.

WALNUT GROWING IN THE NORTH

The walnut has made wonderful strides in popular favor as an orchard tree in the northern counties of this State and also in Oregon and Washington. More inquiries are now being made about this fruit than any other one, and especially from Oregon and Wahsington. Sonoma County has gone very extensively into walnuts during the past two years, and as the soil and climate there are especially favorable for their growth there is little question but that they will yet be one of the most profitable crops of that section. Mendocino County also is paying a great deal of attention to the walnut and an awakened interest is being taken in it in Siskiyou where along the Klamath River, there is a very large body of land suitable to it. The quickest way to get an orchard which will give returns is to secure stock from the nurseries. Trees any where from two to four years old may be set out. They should be removed from the nursery with as little damage to their roots as possible, but before planting all damaged roots should be removed. A hole sufficiently large to accommodate the roots without crowding should be prepared, and the trees be set at not less than fifty feet apart. Crops may be grown between the trees until they come into bearing, so that the land will not lie idle until they yield a crop. The better plan for setting out an orchard although much slower, is to set several California walnuts in each place where a tree is desired, let them grow during the first year and then remove all but the strongest one. This should be left until it is three or four years old and then grafted to any variety of the English, or rather Persian walnut which may be desired. By this method good, stocky, healthy trees will be secured which will bear fruit long after their planters have passed away. The process is a very much slower one than the first, as crops will not probably be got until the trees are from eight to twelve years old. The first method is the more in favor, as in California we do not usually plant for posterity.

A NEW HORTICULTURAL COMMISSION

San Benito county is the last in line in the appointment of a county Horticultural commission, the supervisors at their last session having appointed Wm. Palmtag, W. W. Canfield and F. L. Barnhisel as such commission. Nothing has more forcibly impressed upon the northern counties the necessity for an organization of this kind than the rapid spread of the pear blight. It matters not how well the work of instruction in fighting this pest may be given, nor how strongly the necessity for the work may be impressed upon the greater part of growers. there is no other means of enforcing the work except through the county commissioners, who have the legal power to compel recalcitrant owners of orchards to keep them in order. All the growers in a county except one might do the necessary work to eradicate the diseases, and all their labor go for naught so long as that one refused to clean up and persisted in leaving his trees as a breeding place for the diseases. In this way one obstreperous individual could ruin the industry of a whole community. but this one can be handled by the County Commissioners. This fact is so well appreciated that several of the upper counties which have refused to appoint commissioners before are now coming into line.

Sinaloa--Rich in Resources

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12 inch long, $ 9.00 per 1000
14 inch long, 10.00 per 1000
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Mention Cal. Cul. when writing. Growing Department—Montebello, Cal.
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TREES

We have been swamped with orders far beyond our most sanguine expectations. We still have hundreds of orders for shipment. The season is now rapidly advancing, and in order to make a clean up of certain lines of stock, we are prepared to offer inducements worthy of your attention. The stock mentioned below is all in the very best condition and can be planted any time in March with absolute safety.

Apples

The following Standard Sorts:
Arkansas Black
Baldwin
Ben Davis
Bismarck
Gano
Northern Spy
Red Astrachan
Red Pearmain
Red Bellflower
Smith's Cider
White Winter Pearmain
Gravenstein
Jonathan
Lawver
Missouri Pippin
Rhode Island Greening

Pears

Beaurre Clairgeau
Beaurre Giffard
Doyenne d'Alencon
Duchess d'Angouleme
Winter Seckel
Forelle or Trout Pear
Kieffer's Hybrid
Le Conte
Madeliene
P. Barry

Cherry

Bing
Black Eagle
Black Tartarian
Centennial
Early Richmond
Elton
Great Bigarreau
Lewelling
Napoleon Bigarreau
Ostheimer's Weischel
Windsor

Peach

Elberta, 6000 trees in June buds, on which special inducements will be offered. Also the following varieties in June buds: Heath, Levy's Late. McKevitt (the finest White Cling known), Phillips, Tuseen.

In Yearling Trees—Foster, McDevitt's Cling, Nichol's Orange Cling, Tuscan Cling.

Plum

Our supply is limited, but we still have a surplus of the following sorts. Place your orders at once for immediate shipment.
Burbank
Columbia
Duane's Purple
Grand Duke
Peach Plum
Shropshire Damson
Yellow Egg

Prunes

We predict that in two years from now prune trees will be in bigger demand than peaches were this year. The stock which we have to offer is exceptionally fine, and if you contemplate planting, now is the time to get in your orders, for we are in the position to make you prices which will surprise you. We have a very heavy stock of French Prunes on Almonds, Peach and Myrobolan; we also have a surplus of Hungarian, Inperial, Epineuse, Robe de Sargent and sugar. Don't delay, but let us figure with you if you are in the market for any of this stock.

Figs

You already knew that we are leaders and the only firm offering the Calimyrna Fig tree. Our sales this year have been heavier than ever, but we still have some trees in surplus, however, and it will pay you to correspond, with us. Remember, none are genuine without our seal.

Grapes

Our shipments of grapes are extending all over the world, but with our immense stock it is only natural that we should have some sorts on hand still. Grapes can be planted for a full month yet. In varieties grafted on Phylloxera Resistant roots we have the following:
Alicante Bouschet
Black Malvoise
Cabernet Sauvignon
Feher Zagos
Grenache
Mataro
Moselle Riesling
Muscat
Pedro Ximenes
Petit Bouschet
Petit Syrah
Rose of Peru
Sabal Kanski
Trousseau

On their own roots:
Alicante Bouschet
Black Cornichon
Black Ferrara
Black Malvoise
Burger
Cabernet Sauvignon
Carignan
Charbono
Feher Zagos
Folle Blanche
Grey Reisling
Grenache
Gros Colman
Mission
Mondeuse
Palomino Blanco
Pedro Ximenes
Petit Bouschet
Rose of Peru
Sabal Kanski
Thompson Seedless
Trousseau
White Sweetwater
Zinfandel

Send Your Orders In Now and Get the Benefit of Reduced Prices

We still have a magnificent assortment of deciduous trees, including Texas Umbrellas, Poplars, Oriental Sycamores, Maples, etc.

We are also prepared to fill orders for Green House Plants. Roses. Palms. Evergreen Trees and Shrubs. All this stock is grown under our personal supervision. Write now for anything you want for the orchard or garden, and give us an opportunity to figure with you.

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With the Citrus Growers

BY J. W. MILLS

PRUNING ORANGE TREES

It is commonly stated that dead wood in an orange tree is injurious and is liable to cause disease. It is our opinion that such statements are not the result of careful thought, but are made on general principles. We never were sure that dead wood in an orange tree became a source of disease. It very often is the case that disease causes dead wood. Dead wood as commonly developed in the tree is the result of overgrowing, simply the shading of the slower growing and weaker branches. These small branches and twigs leave no scars, but if left alone will gradually decay and be broken off by natural causes. They sometimes do serious damage to inside fruit by scratching it. This is one of the reasons why it should be removed but there is a better one why it should not be allowed to form at all.

When the small inside branches become weak and partially dead, they have passed their usefulness and should be removed before they die. At this stage they are shutting out more sunlight than they are after they shed their leaves and are dead. It is before they die that they do the greatest harm. If they are removed faithfully every year, the task will be a light one and a higher percentage of fancy fruit will be the result. All growers know that the highest percentage of the best grades of oranges comes from the shady side of the tree. It therefore stands to reason that the more oranges a tree can keep in the shade, the more fine fruit it will produce. If the useless branches —those which have gradually declined —are removed an increased amount of light is permitted to enter the tree, the inner twigs and branches will keep up their work for a while longer and when they too reach the enfeebled stage where they are useless, thy should be removed. This process will increase the bearing capacity of the tree by filling the interior of the tree with fruit which is the best fruit. Now this is not a theory. It has been practiced by one of the most successful oranger growers in Southern California. We have watched his pruners at work in the orchard of Valencias and under this treatment (and perhaps a few other pats on the back) the trees produce enormous crops every year. The pruners find very little wood that is entirely dead, it nearly all has a few leaves on it and of the amount taken from a tree that produces 10 or 12 packed boxes, the trimmings would hardly fill a picking sack, but it is done every year and the pruners follow directly after the last pickers. It is our candid opinion that if the orange growers generally in Southern California would follow this practice, the standard of her oranges would be raised to a considerable degree. It would be expensive to get the trees right, but after that the task is a light one.

This practice of pruning young trees, especially Valencias, has not met with much favor. It is not a popular fad, but some of the most successful and careful growers advocate it and practice it too. The cutting seems quite severe and consists in removing the long rampant growth that takes the lead. This is not cut off as a stub, but the cut is made to branches and the smaller branch takes up the lead or main growth. When the tree comes into bearing it is able to bear up the heaviest crop without propping for all time.

DIE-BACK ON CITRUS TREES.

Any kind of a case where the twigs die off is usually called "die-back," but the real thing is quite distinct. The spring growth seems to be perfectly normal and all indications point to a permanent and healthy growth. About the first of June the foliage begins to die on the young growth and the young stems themselves will die and curl. The base of this growth will sometimes survive and send out another set of buds which will not mature the leaves and so continue through the season till the buds form rosettes. This is accompanied by an exudation of brown gum on the older wood.

The disease works alike on lemon and orange trees and is not very common in California. There is no discernable difference in the character in any degree, of the soil for a depth of three or four feet, where the trees are diseased and where they are perfectly healthy and full sized. Some of the worse cases that have come under our observation, are within forty feet of trees that show no trace of the disease. In such cases, the roots of the sick and well trees have part of their roots intermingling.

The fruit on the affected trees is apt to have chocolate brown spots and the rind is usually thick and rather brittle. The flavor of these oranges is usually good but the quantity is always very small because the spring growth keeps dying back. The trees cannot attain even a fair size for the same reason.

Experiments have been made with sprays containing fungicides, and heavy doses of stable manure, commercial fertilizers and nitrate of soda have given no relief. Tile has been laid through affected areas with the hope that the aeriation of the soil would have a beneficial effect that could be detected. The trees do gain a little each year but it is so slow that they are a dead loss as far as profit goes. Trees were budded over in hopes that they might take a new start. This, too, proved unsatisfactory. This is one of the problems that is lying in wait for our Pathological Station.

NEW USE FOR CITRON.

We were told the other day by a Riverside man, that preserves made with the citron of commerce was a most delicious addition to their lists of desserts. It has a flavor different from preserved lemon or orange and retains some of the genuine citron flavor.

THE GOVERNMENT WHITEWASH

Very frequently we are asked for a good recipe for making whitewash. Below we again give the formula used by the government in making whitewash, which will be found very good for poultry houses, fences and outbuildings generally.

Take half a bushel of unslaked lime, slack it with boiling water, cover during the process to keep in steam, strain the liquid through a fine sieve or strainer and add to it a peck of salt previously dissolved in warm water, three pounds of ground rice boiled to a thin paste and stirred in while hot, half a pound of powdered Spanish whiting and one pound clean glue previously dissolved by soaking in cold water and then hanging over a slow fire in a small pot hung within a larger one filled with water. Add five gallons hot water to the mixture, stir well and let it stand a few days, covered from dirt. It should be applied hot, for which purpose it can be kept in a kettle or a portable furnace. Coloring matter may be added as desired. For cream color add yellow ochre; pearl or lead, add lamp or ivory black; fawn, add proportionately four pounds of umber to one pound Indian red and one pound common lampblack; common stone color, add proportionately four pounds raw umber to two pounds lampblack. For interior work: Slake a peck of lime till it is thick and creamy. While it is hot mix with a pint of linseed oil and one-quarter pound of glue previously dissolved in water. Let the mixture stand several hours before applying it. A little lampblack dissolved in vinegar and mixed with whitewash gives a grayish tint, which may be preferable to pure white, a little umber gives fawn color and yellow ochre a cream tint. Very little coloring matter should be used, or the shade will be too dark.

If this is made somewhat thinner than indicated above and strained through a flannel cloth it may rapidly be applied with a sprayer such as is used in spraying trees. When strained through cotton cloth the lint from the cotton often interferes with the work.

"MARBLES," NOT "NAVELS"

In the article on the hardy orange, by Dr. C. K. J. Jones, published in this department last week he wrote that said hardy oranges ranged in size from "marbles to tangerines." The intelligent linotype operator made it read "navels to tangerines."

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And all the leading varieties of Orange, Lemon and Marsh's Seedless Grape Fruit Trees for sale. Are principally two years from bud and very fine. Can furnish from my nurseries at Glendora, Riverside or Redlands, as desired. Address
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Valencia Late
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ONE MILE NORTH OF SAN DIMAS

15,000 Fine Trees three years from seed next spring. No clubs—fine fibrous roots; just the tree to take hold of a new home.
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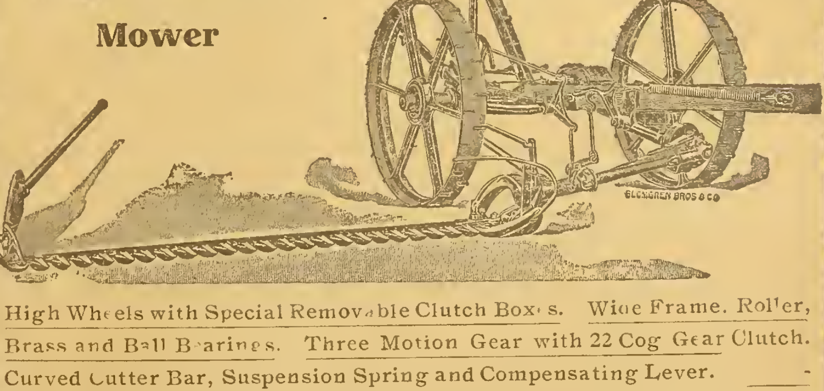

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E. G. Wood, Owner, at Nursery or Room 732 Huntington Building, Los Angeles, Cal.

The Ornamental Garden

BY ERNEST BRAUNTON, LOS ANGELES, CAL.

FORCING PLANTS

Some curious and successful experiments are now being made in Europe with ether, the object being to ascertain whether it can be used to advantage for the purpose of forcing hothouse or other plants. The ordinary course is to wait until the first frost has stripped the leaves from the plants, thus permitting them to take for a season that repose which all living creatures need. If vegetation could be arrested and repose begun sc[illegible], it is evident that the plants [illegible] blossom much earlier next season. [illegible] this is precisely what the ex[illegible]s with ether are designed to accomplish.

WATER GARDENS

As the beauty of a painting is enhanced by a fine setting, so should our water garden have a background of tropical and subtropical trees and plants. How great an advantage do we possess over those who live in colder latitudes, when we can use for this purpose, planting permanently. the feathery papyrus, giant grasses. large-leaved caladiums, musas, the towering bamboo, and a great variety of noble and beautiful palms.

CULTURE OF THE CHRYSANTHEMUM

The world-wide popularity of the chrysanthemum, and its prominence among cultivated flowers, is excuse enough for anyone to wax eloquent; nevertheless, we shall be as brief as possible and confine ourselves to the production of the giant flower.

It is now rapidly nearing the planting season, which is from March 15 to the last of July. For outside culture, March, April and May are looked upon by the writer as the most favorable time to plant in California. Intensive culture alone will bring about the lovely giant-flowered beauties so much admired by all lovers of the Autumn Queen. It is my purpose to show that there are no secrets about it, and that it is a simple and easy matter, after all has been said, to have the largest and finest blooms in one's own garden.

The chrysanthemum is a gross feeder, and needs plenty of moisture. Preferably, the soil should be made moderately rich at planting time, with well rotted stable manure, but should not receive any more enrichment, unless the plants show the need of it, until the buds form, when liquid manure, or chemical fertilizers of some kind, should be applied while the ground is still damp from irrigation. When the buds begin to show color, all fertilization should cease and only a moderate amount of water be given them. The fact that the petals will "burn" if the soil is too rich at blooming time, is the reason why liquid fertilizers should be given instead of any more lasting manure, at budding time. The chrysanthemum rapidly consumes all fertilizers given in a liquid form, which leaves the soil in perfect condition at blooming time.

If one is desirous of obtaining the largest flowers, the plant should be limited to not more than five or six shoots, each to produce but the one terminal flower. It is better that the plant be made to branch low by nipping out the top. When it has reached six or seven inches in height, the required number of shoots may be allowed to grow until they have reached eight or ten inches in height, when, if the plant is desired to grow less tall than would otherwise be the case they in turn may be nipped off at the ends, and one shoot from each, be allowed to continue on to bloom later. All side shoots, together with the suckers from the roots of the plants, should be rubbed off as soon as they appear, leaving only such as are desired to bloom. Only one bud should be allowed to remain on every stem, and that the most promising one.

A good liquid manure may be made from fresh horse dung and water left to soak several days. About one-half bushel of manure to a barrel of water. Nitrate of potash or nitrate of soda may be used at the rate of one ounce of the chemical to ten gallons of water. Fertilizers of this nature should be used cautiously, for the plant will utilize it immediately. It should be watered with it once a week until the buds begin to show color. At this stage of growth, the more varied the liquids used the better the result, and for that reason we advise to alternate liquid stable manure with the chemicals.

I have said nothing about cultivation because it is second in importance to fertilization. It is better to cultivate after liquids have been applied so that the next application will have a better chance to permeate the soil.

If a great show of color is desired, it is only necessary to pinch back the plant several times, and allow from fifteen to twenty shoots to grow and bloom, when the flowers will be probably one-third smaller. The plants will, however, remain in bloom several weeks longer, and yet produce flowers four to six inches broad.

There is no other flower which will repay good care, in a more liberal and gracious manner, than the chrysanthemum, and none which will bloom so freely, and look so altogether lovely as the Autumn Queen.

Let us give it a place in our garden, that it may gladden our hearts when nearly all other flowers have ceased to grow and bloom for us. Wm. W. Marugg., North Pomona.

CELEBRATING ARBOR DAY.

In many of the cities in the upper part of the state Arbor Day is growing in popularity and this year has been more generally celebrated than usual, the ladies being the prime movers in the matter, as they have taken hold of the work of city and village improvement with commendable energy. The idea is a most excellent one, as it cultivates a taste for the the beautiful in nature, especially among the young folks who are always active coadjutors in the work. There is no better or more grateful form of ornamentation for a town than well grown ornamental and shade trees along the streets. and in this direction is the work of Arbor Day directed. But too often the work ends with the planting, and those who have taken part think their labors ended when the young trees are set out. This is wrong. When the trees have been planted the work has only commenced. They have then to be carefully attended to and cultivated until they have acquired sufficient age to care for themselves. Every town should have its town or village improvement club, one of the duties of which should be to see to it that the shade trees of the town are properly cared for. In such a case there would be some encouragement for the people to turn out on Arbor Day and plant trees with the assurance that after planting they would be taken care of until they were old enough to reward, with their beauty and their shade, the efforts of those who planted them and of those who care for them. Arbor Day is much to be commended, but let it be well followed up.

"You women folks must be wearin' a sight of birds on your hats this season," ventured Uncle Abner, as he carefully removed his coat.

"Why, Abner?" asked Aunt Sophronia.

"Well, they wuz a feller sot in front of me on the train that was dressed like a dandy—fur-lined coat, a diamond big as a shell bark hickory nut, and a plug hat; and I heard him tell the feller settin' with him thet he'd made over $10,000 this year skinnin' jays."—New York Times.

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In the Vegetable Garden

BY ERNEST BRAUNTON

THE VEGETABLE GARDEN

The pleasure and economic importance of vegetable growing is but slightly appreciated in many sections of California, and as a consequence, it is given but careless and ignorant attention. It is no difficult matter to curtail the table expenses one-fourth by giving a garden of an acre, or less the care and attention it deserves. Favored as the State is in soil and climate conditions, fresh vegetables of a great variety should daily be gathered from a well kept garden throughout the entire year.

"LEGGY" TOMATOES

Plants which have grown tall and spindling are known among gardners as "leggy" plants, in distinction to those which are "stocky," or short and stout. Leggy plants usually give very poor results in the field when set in the ordinary manner; but some growers obtain good returns from them by laying the stem upon the ground or in a little trench, when setting, and covering it with earth, allowing only a few inches of the tip to protrude. This treatment prevents the breaking of the plant by the wind, and roots will form along the buried portion which aids in the production of a crop of fruit, but "leggy" plants seldom yield a crop like that from stocky, upright plants.

VITALITY OF BURIED SEEDS

The Bureau of Plant Industry has for years carried on extensive experiments to test the vitality of seeds buried at varying depths and periods of time and the results carefully noted.

From these results it is pointed out that many weeds can be destroyed by deep plowing and leaving the soil undisturbed for some time; that the seeds of cultivated plants lose their vitality, while the seeds of weeds retain their power to grow remarkably well when buried; and that the vitality of all seeds is best preserved by careful harvesting and storing in a dry and comparatively cool place. The results further indicated that the deeper seeds are buried the better the vitality is preserved; that hard seeds of the same species retain their vitality much better than those with softer seed coats; and that unhulled seed, especially of the grasses, retains its power of growth better than hulled seed.

AGRICULTURE WITHOUT IRRIGATION

In a bulletin issued by the Bureau of Plant Industry, entitled "Agriculture Without Irrigation in the Sahara Desert," the country known as the Oued Souf, situated in extreme southeastern Algeria, is described and its population, climate, water supply, soils, and date gardens are discussed.

The discussion on the date gardens includes descriptions of the methods of planting, care of the palms, and the harvesting of the crop. The manuring of the soil, the removal of the drifted sand from the gardens, the yields secured, and the varieties of dates chiefly grown are also considered. It is pointed out that in the Oued Souf, renowned for the large yields of its date orchards and the high quality of their fruit, the type of agriculture practiced is not dry farming, as it depends upon the ground water, which in the gardens is everywhere near the surface of the soil.

It is further stated that the sand hills of the region concentrate and reflect so much heat that the hollows among them act as forcing houses in producing early dates. While the same conditions with respect to ground water may not be found anywhere in the United States, it is believed that the growing of dates in the hollows between the sand hills may be applicable to the hot regions of the Southwest, where large sand dunes exist, and where water for irrigation is available. "It seems certain that in pockets of this character excavated among the dunes the Deglet Noor and other valuable varieties of dates could be forced to early maturity."

PRUNING TOMATOES

In a late Massachusetts bulletin is given a summary of the results secured at the different experiment stations in this country with tomatoes as regards soils and fertilizers, transplanting ,pollination, time required to grow crop, yield per square foot, pruning, etc., with the details of experiments by the author on pruning tomatoes. Most of these experiments were conducted in greenhouses.

In one experiment, when a few of the lower leaves were removed from plants trained to a single stem. there was a gain of 32 per cent in stem growth and 18 per cent increase in the size of the fruits over unpruned plants. In three other experiments extending over 1, 2, and 3 months respectively, with plants trained to two stems, the removal of the lower half dozen or more leaves gradually decreases with time.

When the leaders were not cut back the smallest number of fruits per plant was obtained on the plants trained to a single stem. These fruits were of good size and the plants thus trained produced the earliest fruit of all the different methods of training. The yield also on equal amounts of trellis space was the greatest by this system of training.

"The greatest average weight of individual fruit, as well as the greatest weight per plant, however, was given by the 3-stem system where the leader was headed in, whereas in the average number of fruit per plant this system is lowest. There was only one experiment in which heading in was practiced. In general, however, these experiments show that if we wish to obtain large fruit with a tolerably good number per plant the single leader constitutes one of the best systems, with the 2, 3, and 4-shoot systems following in tolerably uniform succession. No doubt the largest fruit and the greatest acceleration in maturity can be obtained by heading in the leader."

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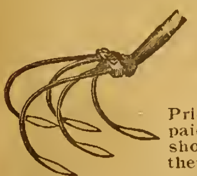

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You know we could not do business on such liberal terms if our seeds were not as represented. They are guaranteed true to name and the seed grown. Remember, we require no money in advance. Order today, using coupon below, and you will say it was one of the most profitable dollars you ever spent.

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A prominent stockman says about the Golden Giant: "I feed about as much grain and hay with the Giant as I did without, but I put cattle on the market in three-fourths the usual time."

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Try these two mangels. You will find that your cows give more milk when eating mangels in their rations and that cattle are ready for market in about three-fourths the usual time.

Both of these Mangel Seeds sold only in sealed pkgs.	Package . 10c Half Pound, 25c One Pound, 50c PREPAID

By express or freight, at expense of buyer, 10 lbs. **$2.50**

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CALIFORNIA CULTIVATOR

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The Pure Food Bill—The whole country will give Congress the glad hand for the passage of one of the most wise bills which has ever been before that body. It has been stubbornly fought, but it has triumphed. Next to the Rate Bill, the Pure Food Bill is of most vital importance to farmers. Why? Because they cannot stand for the adulterations which are made in the cereals compounded into adulterations. It lessens the value of their selling commodities. Then ,too, if by adulteration of foods, sickness results, the farmer feels the effect more seriously than any other class of our citizens. He is farther removed from the physician and it costs more for medical attendance on his family. The bill ought to pass. The welfare of the country demands it. It will eventually reach the President, however, and that official will attach his signature to it with satisfaction for he is advocating it.

Last year the records show the death of over 1500 persons poisoned from eating adulterated foods, and this week a subscriber sends the Cultivator a formidable list of persons killed and injured in one month by eating adulterated foods as compiled by a current magazine. The list of the dead includes four persons who died from eating toadstools mixed with mushrooms, three poisoned by candy, three by wood alcohol contained in lemon extract, and many by the same subtsance in whiskey; four infected by typhoid fever germs contained in ice cream. twin babies poisoned by formaldehyde used to preserve milk, and hundreds of persons poisoned by beer manufactured from glucose, in the manufacture of which sulphuric acid made from an arsenic bearing mineral has been used. Many of these cases were reported by health officers and food commissioners of the various states in which they occurred.

The importance of the measure is such that it would justify a combined effort on the part of the country to force the bill to an early determination.

* * *

Business Conditions—Barring the internal troubles in China, which may be exaggerated for political effect, of course we cannot judge of that there is no doubt in the business and commercial sky of the world. The railroads of this country have placed the largest orders for equipment and extensions that were ever known. Bank clearings are remarkably large, indicating an unprecedented volume of business. The increase for the west in bank clearings is most marked, the end of February showing a most healthy condition and vital activity in all our avenues of trade.

The crops of the country at large promise a maximum revenue to the grower. Live stock and live stock products are moving in large volumes to market and are met with trong export demands. California fruits were never in such demand nor have they been more satisfactory to growers. All in all, the evidence at hand is promising of continued and assured prosperity for the people who produce as well as for those who invest. The reorganization of life insurance companies may be taken as a most healthful symptom—an evidence of the strength and capacity of our people to right a great wrong without panic. Of course, we are speaking in the broad sense of business conditions, in Southern California there is only one thing to create possible uneasiness and that is the recent decision of the Supreme Court on the Orange Rate case. But growers are not hurt, at present. and if the transportation lines will conduct their business, as they say they intend to, giving fair treatment to shippers of California fruits, we shall witness the most prosperous year in 1906 the State has ever passed.

* * *

The Owens River—Work is to be begun at once on the Owens river project and the expectation is that the great conduit will be built to the point where it is to pierce the mountains this year—a distance of 60 miles. There cannot be too great heat exercised in pushing forward this proposition. It ought to be completed and water flowing from the river to Southern California points within four years. The rate at which the population of the territory south of the Tehachepi. is increasing, the country being opened to agricultural and horticultural advancement, renders the necessity for abundant water imperative. Besides this, the cities and towns are growing so fast that the present supply of water for domestic purposes is not more than equal to the demand.

With the problem of water settled, what is left to make Southern California the Mecca of the world in point of fruit, flower and vegetable culture? Of course as a farming and dairy proposition, Central and Northern California will always hold the place, for the water is abundant and the climate specially encouraging to stock and dairy production. But while this is not true of Southern California, yet it is true that with abundant water these interests will enlarge to much greater proportions than is now the case. We shall be satisfied all of us, when the Owens river comes down to greet us for a new kingdom will be born when the King comes.

* * *

To Appeal to Congress—The orange growers of Southern California have united in an appeal to members of Congress to amend the provisions of the existing rate law to overcome the decision recently rendered by the Supreme Court. Representatives from every locality in Southern California interested, have been sent to Los Angeles to confer with the Fruit Exchanges and to memorialize the President and Congress to amend the law so as to give the citrus growers some living chance against possible railroad rate usury. The growers do not seem to credit the statement sent out by certain freight agents that the transportation companies will not avail themselves of the power given in the Supreme Court decree, and create a new tariff. They think possibly no action will me taken while Congress is in session, but as soon as it adjourns the railroads may raise the rate and arbitrarily route shipments to suit themselves. It is to head-off such conditions that the present action is taken.

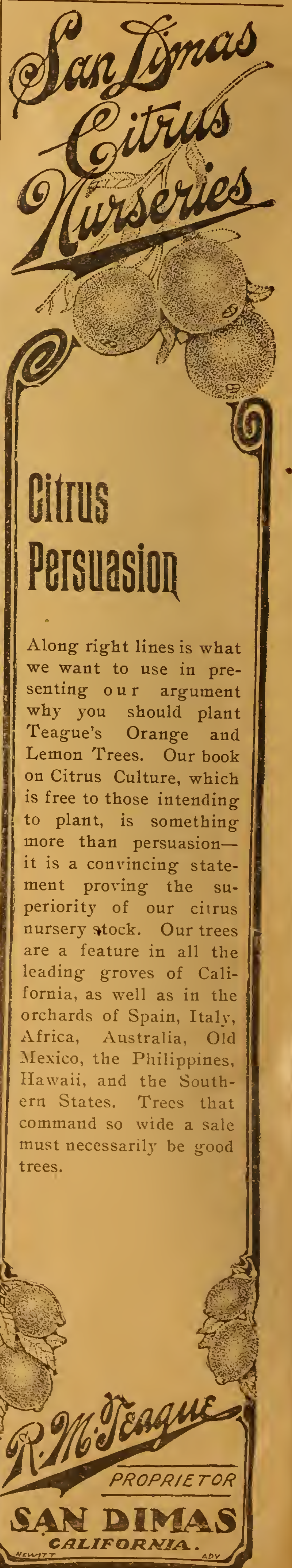
As was said by the Cultivator last week, the railroads are anxious for business, and the fruit business of California is a great big thing to them. They will not likely proceed to kill their own prospects by injuring other people, no matter how bitter they may feel toward them. Hence as the orange and lemon trade is a paying one now, why should the present arrangement be disturbed by the transportation lines? It does not seem probable that it will be, but nevertheless, "a stitch in time" is a good thing to take, and the citrus growers will have done all they can to avert a calamity if they attend to the subject of amending the present law, decided by the Supreme Court, and putting it out of the power of the railroads to work an injury to them if they ever take the notion to do so.

* * *

The Dominion Short-Horn and Holstein breeders held their annual sessions at Toronto on the 6th. The former received during the year $11,380 for registration fees, $5,076 membership dues, and $100 interest. W. G. Pettit was chosen president. The Minister of Agriculture addressed the society, counseling them to consider "whether we shall retain the beef ideal or vary for a breed that shall include the dairying industry as well."

The Holstein society has taken in 59 new members during the year and registered 1636 animals, both these figures being notably larger than those of 1904. Mr. F. S. Spencer, Assistant Live Stock Commissioner, presented what is known as "the government's plan" that the various associations shall have a record of merit, and a fixed standard by taking tests and ascertaining what the good cows are capable of, which plan was rejected by the meeting. R. S. Stevenson was chosen president; G. W. Clemons, St. George, secretary.—Country Gentleman.

The annual meeting of the Jersey Breeders Association of Southern California will be held at Santa Ana, Tuesday, March 13th. An interesting program has been arranged for the meeting. The electon of officers will take place in the forenoon, and discussion of matters interesting to Jersey Breeders will occupy the afternoon session.



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Citrus Persuasion

Along right lines is what we want to use in presenting our argument why you should plant Teague's Orange and Lemon Trees. Our book on Citrus Culture, which is free to those intending to plant, is something more than persuasion—it is a convincing statement proving the superiority of our citrus nursery stock. Our trees are a feature in all the leading groves of California, as well as in the orchards of Spain, Italy, Africa, Australia, Old Mexico, the Philippines, Hawaii, and the Southern States. Trees that command so wide a sale must necessarily be good trees.

R. M. Teague
PROPRIETOR
SAN DIMAS
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NEWS OF COUNTRY LIFE IN THE GOLDEN WEST

HORTICULTURE.

California now produces about 6,000 carloads of apples per annum.

A wonderful interest has been developed in Mendocino county in the planting of vineyards, and according to the papers from Ukiah, over four hundred acres are being set out.

R. Malan four weeks ago set out some strawberry plants. Today they have berries as large as a marble, which will be ripe within ten days. —Bayley News of this week.

L. T. Orr, the Occidental wine man has shipped 75,000 gallons of wine from his winery at Grafton, as the Green Valley station is now called. Another big shipment will move in March.—Sonoma County Farmer.

The horticultural inspectors of Sacramento county have been instructed to serve notice on all pear growers who have neglected to take proper steps against the pear blight and proceed to have the work done.

The local authorities of San Bernardino have requested that a quarantine be placed upon the empty orange and lemon boxes that are returned to them from the north. They fear that these boxes may become impregnated with the Purple scale.

The Hanford Sentinel says that John P. Schalk shipped [illegible] 000 Muscat grape cuttings to Corcoran last week, which is part of a shipment of 200,000 that he will send down there. That number of cuttings will set about 400 acres and if the enterprise succeeds there will be a chance to get an addition to an association when the next one is promoted.

Prof. Newton Pierce, government pathologist, accompanied by a committee composed of Supervisors Smith, Holderman and Fulsom, has arranged to plant some fine trees and shrubs in the Orange county park at Orange. Prof. Pierce has offered to present the park with 175 different species from all over the world, if the county will care for them.

The Chase Nursery Company of Pasadena gives several hundred rosebushes to the schools of Riverside county. The same gift was made last year, and proved an incentive for the improvement of numerous school grounds in several districts of the county. They have also made a similar gift to the school gardens of Los Angeles City.

The Pomona Times is authority for the statement that R. M. Teague has just sent a number of choice specimens of citrus to Algeria by way of exchange with the director of extensive botanic gardens in that state. For buds of varieties grown by himself, Mr. Teague will receive a large number of some of the rarest specimens known on the shores of the Mediterranean.

The oranges at Redlands began dropping, that is, in one grove, and the trees to shed their leaves. Commissioner Peace made an investigation which disclosed the fact that a gas pipe running along the street fronting the orchard had sprung a leak, and the gas was gradually percolating through the soil, proving poisonous to the citrus trees. The fact that quite a large area was affected is explained to be due to the gas being blown by the wind through the orchard after escaping from the soil.

AGRICULTURE.

Orchardists are planting English walnuts in large acreage in Sonoma county.

It is reported that from 600 to 800 acres of cantaloupes will be planted in the Exeter and Lindsay district this year.

In the Placentia and Orangethorpe districts there are 560 acres of cabbage. The output will consist of about 600 carloads.

The Coachella Submarine says: "The asparagus crops are just coming forward; it takes three years for them to come into bearing.

The Gardeners' Association of Pasadena has announced a list of several handsome cups and trophies to be competed for in the coming flower show to be held April 5, 6, and 7.

Orange county has sown more barley this year than ever before. The demand for feed is growing with the population of the country and Orange county is a king on barley production.

The sowing of alfalfa has been going on steadily, says the Vacaville Reporter, and there will undoubtedly be between 150 and 200 acres sown to alfalfa this spring in that vicinity, this being a conservative estimate.

Two hundred and fifty tons is the amount of the county's peanut crop for the year, according to the statement of C. E. Utt, known as "the goober king." Three hundred acres produced the whole crop, of which eighty tons were raised by Mr. Utt on one patch of 100 acres.

Orange County bean growers on the San Joaquin ranch will put in more than 7,000 acres this year. Originally but 100 acres was planted as an experiment, now there are over 7,000 acres so used. On this ranch beans produce there from 10 to 15 sacks to the acre, so that the yield may be expected to be about 90,000 sacks.

The ten thousand mark has been passed in beet acreage for the Chino factory this year. To be more exact 10,010 acres were contracted for up to last Wednesday, and probably 200 or 300 acres are yet to come. This is a record acreage and promises the biggest sugar campaign for 1906 that the Chino factory has ever had.—Champion.

The Imperial Standard tells us that Theodore White of Calexico has alfalfa that stands over two feet and hasn't bloomed yet. He has nearly ten thousand cabbages that will soon be ready for the market. While raising grain and alfalfa Mr. White does not overlook the little things. He sold over forty dollars worth of radishes and young onions in Calexico during the month of February.

A small bug is working havoc in the early peas in Alameda county. It is taking the entire crop. thus far it has been confined to certain sections but it is feared by horticulturists that it will spread throughout the country. It attacks the buds and ruins them before they have a chance to develop. It is feared fruit is also in danger from the pest.

The shortage of the celery crop is a disappointment to growers. In the Santa Ana district G. W. Moore, president of the celery association estimates that there are only about 150 cars of green top celery left. To prevent a repetition of this shortage in February it has been planned to plant next season at least 1,000 acres to Green Top, a late and hardy variety. This will insure a good supply for the latter part of the season when Golden Heart is exhausted.

MISCELLANEOUS.

A new weekly paper called the Palo Alto Tribune is to appear in March in that town.

Palo Alto is all astir over the question of cutting down live oak trees that stand in the streets.

About 1300 legal divorces were granted in California during the six months ending January 1, 1906.

The Carnegie Institute has appropriated $315,000 to build and equip an observatory on Mt. Wilson near Pasadena.

Lent is a fast of forty days, not including Sundays. It began March 2, Ash Wednesday and ends with the Saturday preceding Easter.

The cornerstone of the new $15,000 City Hall at Sonoma was laid with appropriate ceremonies by the officers of the Grand Masonic Lodge of California on the 24th.

The solution of the water problem at Riverside has been helped by the purchase of the San Bernardino Valley Traction Company, by the Riverside Trust Company.

A movement is being made at Covina for the organization of a new mill and feed company, to be known as the Pioneer Mill and Feed Company, with a capital stock of $20,000.

It would appear that the affairs of the California Development Company are to be thoroughly aired in court. Injunctions, a Receiver and sundry other conditions are asked by the stockholders.

The Los Angeles Chamber of Commerce has appointed Congressman McLachlan and R. Woodland Gates to represent it at the National Reform convention to be held in Washington March 13.

A Covina grower writing to Los Angeles Times say that: "The way the people of Los Angeles have been fed on the refuse of the packing-houses each season by the peddlers is a shame and a disgrace which ought to be suppressed.

The Oakland Enquirer says the Southern Pacific and the Gould lines are planning to build into San Diego, which fact, says the Enquirer, will make of San Diego the principal seaport city of Southern California.

It is reported that the Southern Pacific is planning to greatly extend the development of its holdings in the Kern River field. The report is to the effect that sixteen new derricks are to be erected at once and the new wells rushd. This is one of the greatest oil fields in California.

LIVE STOCK.

There is no place on the globe where horses can be raised cheaper or quicker. than in the Imperial Valley. —Standard.

The [illegible] of Corning reported this week the shipment from that station of 8,000 pounds or four tons of dressed turkeys, 40 dozen chickens, and 1350 dozen eggs. Great poultry country is Corning.

The Monterey Fish and Game Association have taken action to stop the Japanese fishermen from denuding the bay shore of shell fish. The game laws are to be strictly enforced hereafter.

Some of the dairymen around Palo Alto are proposing to inaugurate a campaign to rid the city of sellers of milk from individual cows claiming private owners of unhealthy cows are distributing germs of tuberculosis from cows affected with the disease.

Thomas Turnbull of San Francisco has purchased a farm at Antelope and has begun the work of farming with characteristic energy. In 1899 Mr. Turnbull was selected by the State Board of Trade to represent the State of California before the Congressional Industrial Commission of Agriculture and Agricultural Labor.

A report from Profs. M. E. Jaffa and A. R. Ward of the University of California upon the milk supply investigation conducted by them while acting as special inspectors has been filed. The most important part of the report is that devoted to the subject of tuberculosis in cows. The tuberculin test is, in the opinion of the experts, one which should be regularly applied to all milk coming into this city as they hold that the disease can be communicated from milk of an infected cow to the human subject.

LINER ADVERTISING

Advertisements in Liner Column will be charged 1¼ cents per word. No advertisement taken for less than 25 cents. Eight words to a line.

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ELDORADO CONSOLIDATED MINES. Forty-one claims, situated north of Indio, Riverside Co., Cal. Very promising. I have examined tnem and know of nothing beatter for investment in the State The company is well organized and is vighrously pushing the work of development. Rich ore and much of it. A limited number of shares are offered at most reasonable figures. As geologist and mine examiner. I have had large experience in mining matters. It will pay to look into. Address for particulars, DR. STEPHEN BOWERS, Secretary and Treasurer, 1135 Dewey ave., Los Angeles.

Edison Phonographs and Records at factory prices, delivered free anywhere on receipt of full retail price; largest stock of Edison records west of Rockies; send for circulars. Peter Bacigalupi, 786 Mission St. San Francisco

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Live Stock and the Dairy

BY MRS. MINNA E. SHERMAN, FRESNO, CAL.

MORE FEEDING.

In raising the herd standard the usual way is to use a sire better than the cow he serves, one that has a good dam and a good great dam. This will raise the amount of butter fat in the quickest way, when supplimented with heavy feeding to increase the milk yield. Even if they are selected scrubs feed them all they will pay for, and if they do not bring in a reasonable profit as dairy animals, they will sell to the butcher as beef, if fat, though I would not take up the business of fattening cattle in the dairy. Here is where the monthly test has its greatest value in preventing waste. These common cows have no race inheritance that is known; they are simply the individual cow so there is no race characteristic to judge by.

When a herd has been in the same hands for a time the eye grows skillful in seeing the sire and dam in the heifers I can tell in the pure-bred heifers at once if the Aggie blood is in the ascendant or if it is the Mechthilde or De Kol, and from the strain can predict if the heifer will be a heavy milker or a rich one and if she has stamina, then if she has all three, she is a record breaker—but only time can prove the strength and amount of butter-fat. In the monthly test the cows that are paying handsomely for their feed are encouraged by yet more liberal feeding and given all the grain mixture they will clean up, there is where nice feeding judgment comes in; to give freely, yet not to overdo it.

* * *

The few cows in a well culled out herd that go to beef are turned out as soon as possible, here is where a large ranch has advantage over smaller places in that this beef is consumed at home, and saves enough in the difference between the prices paid and the prices charged by the butcher to pay for the food consumed, and then one knows that it is healthy meat. I have had cows among the natives that did not respond at all to grain feeding and did well on grass, these cows fell off in milk when winter came and had to be discharged, so again the Babcock test saved money.

The half bred heifers will come into milking in two and a half years after starting with common stock. These are tested monthly from the first calf. Many of them will make as much butter as heifers as their mature mothers are making. This first good blood will stamp an identity on the calves so that they will run more uniform in habits of feeding than their dams. The education now needed is to fix the milking period. It is well to hold back the breeding of these heifers for a time so that they will not freshen again for a year. Then push them with feed and milk them even if they only give a small quantity up to within eight weeks of the time they freshen, then dry off and cut the grain out entirely. I have often had heifers milked that only yielded a quart toward the last, this of course, did not pay, but the next time the heifer freshened the difference between her and the neighbor's cows was marked.

* * *

The old advice of breeding the heifers back to their own sire is wrong, and will only result in loss, I tried it, when absolutely ignorant of stock raising, on the advice of a great dairy authority. I was foolish because I should have thought that Moses knew the laws of life as well as the moral laws, and followed him as a greater authority. The heifers bred in this way on the ranch simply faded away before reaching their fourth calf; it was a severe lesson for there was a bunch of over forty.

The next sire of the same breed that followed the first sire should be more strongly typical of his breed, or finer, for the physical side has been pushed away with the first cross of the improved strain, and now the mental, if this term can be used, the mental meaning, the acquired inheritance comes into play. Succulent food is needed in quantity, corn silage, soiling crops, beets, pumpkins or even alfalfa hay swelled by wetting over night. With grain enough to supply the required nutriment and the milk made, for without both succulency and enough dry food to make up the amount that the animal put into the milk, the development cannot be complete. This is proceeding along the old lines of development laid down by Darwin's law of heredity, and it has been followed by all the great breeders of live stock. This plan has developed all we have in the great breeds of cattle. It has also developed the two minute horse and thirty pounds of butter cow. Yet there comes Mr. Burbank to say that environment is the strongest force. I feel now like trying the experiment if without good blood it be possible to make great cows, by feeding scrubs. I do not believe it would, though a long period of selection, when environment would become inheritance. I know that there are native cows that have been selected and handled that give surprising results, yet they will not transmit it and the whole process is too slow and expensive to throw away cattle as Mr. Burbank does, a hundred thousand seedlings to preserve one. It would be beginning a new race of cattle, for in the second or third generation environment has become heredity and in many generations it has become habit, and at last it is recognized as the type.

* * *

In making the first test of the heifers it arouses interest among the men to ask them to choose the first, second and third best and then the poorest milker in the bunch. Sometimes they grow so interested that they they bet on it. When I used the old twelve-bottle test that turned with a hand crank, I never lacked for recruits to "make her spin." Rarely has the first heifer chosen as best been the best, that is a matter of surprise. The best heifer, however, has always been among the first five, and the poorest has rarely failed to have been picked out, so there is after all, a little danger of a man selling off his best cow unknowingly, as is so often stated in dairy literature. Indeed, rather, it is the tendency of every man to overrate his cows production, or else why would they keep cows that do not pay at all? It is not surprising after all that the men do not come any nearer than they do, as the minute quantity of fat that makes a pound or two of butter in a week is not noticeable in the increased richness of a pailful of milk. To the untrained eye yellow milk is the richest. While this color is desirable it has nothing really to do with the butter fat globules, and often white milk may be richer when tested by the Babcock test.

Cows show considerable variation during the year, and among the native cows I have owned that have long records, one especially is deserving of note. This cow we called Pet. In 1894 she made 200 pounds of butter. In 1895 she made 275 pounds of butter. Her best effort in 1897 was 301 pounds; in 1898, she made 344 pounds; in 1900, 396 pounds; in 1901, 368 pounds; in 1903, 345 pounds; in 1904, 193 pounds, in 1905 231 pounds.

At the end of this year the cow died. She had had her fifth calf when the record began: so that when she died she was of full age.

When this cow was first purchased she was very thin, just come from the hills, she was very wild at first but became gentle, as her name indicates, and was a pet of all the milkers. This shows the effect of good feeding on even an old scrub cow. It is said by the friends of the scrub cow that she is immune from tuberculosis, yet if the reports that come to us from the inspectors of meats in San Francisco are reliable, the sons of the scrubs are even more tuberculous than the dairy cows. The disease has in late years, no doubt, increased in range cattle, since the ranch cattle have become more and more of dairy animals, and their offspring have been sent to the hills. There is a constant traffic in very young calves, the milkman wishes to get rid of them and the butcher pays only a trifle, so the women in the hills load up the wagons with them and raise them by hand. It is their chance to get a little herd of cattle for themselves at almost no cost.

The risks of infection with this disease in a dairy herd comes within itself, and no sire should be used, except from a tested herd, or a herd where the calf is raised on milk separated at home for the mixed skim milk from a creamery is a menace to the health of the herd.

In breeding for butter fat the work is away from nature. As nature has little use for extra fat in raising young animals, she tends toward making them muscular, and with solid lean tissue, as in the race horse, under the pressure of high feeding the animal weakens, and after a time ceases to breed freely, as the stamina drops and it requires a wise man to see that the herd is not bred out of existence.

Cows like change of food and change of surroundings, I think ours do better if they have an outing, so the dry cows are sent in bunches to the other ranches and seem to be much better for the change. How happy they seem as they lay on the banks of Fancher Creek, under the shade of the big cottonwoods, chewing their cuds, with eyes full of dreams as they watch the rapid water dimply as it rushes by. I often wonder what is in their thoughts, apparently so full of peace are their contenances.

FOMENTING THE UDDER

Editor Cultivator.—I have a heifer that has a sore bag just on hind teat. It is swollen hard. I used belladonna sweet oil and camphor, and yet it does not seem to help it. C. J. L.

The remedy used is a good one, but usually people fail in the application of remedies to the udder and teats of the cow. The teat should be fomented with flannel rung out of hot water, for twenty minutes, changing as quickly as it cools, twice a day, timing with a watch, while the teat is soft draw off the milk with a milking tube, then apply the sweet oil and belladonna. If the weather is cool the udder should be protected with a bag made of blanketing. We often cure these troubles with one thorough steaming. The cow is brought to the engine house, and a heavy blanket pinned over her so as to enclose the udder, one of the milkers sits down beside her and takes the steam hose and also the udder against his hand and the steam is turned on. The man feels it all the time so it is not too hot. An hour's steam usually takes out all inflamation in a recent case and the cow does not drop in her milk at all and is relieved of pain at once.

TO DRY THE COW

Editor Cultivator.—Will you kindly inform me through your paper as to the best way to dry up a cow just before calving and how long should she be dry, and after calving when is milk fit to use. A. S. Pasadena.

At ten weeks before calving notice for two milkings how much milk the cow is giving, then leave half a pint or less at each milking in the udder.

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As I am going out of the horse business, I will sell my **Norman-Shire Stallion** at a very reasonable price. Has imported blood on both sire and dam's side; age 7 years, color black, gentle and sure foal getter.
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Stop feeding grain or bran, and if the grass is very good turn her out for only half the time and give her hay the rest of the time. When the milk flow is well reduced milk once a day and then only every day until the flow ceases. An ordinary milk cow should be dry six or eight weeks, The milk is merchantable at the fifth to ninth day according to the city ordinances. The ninth milking is usually considered as right on farms.

SEED CORN.

Editor Cultivator: I am thinking of building a silo and was quite enlightened on the subject of "Ensilage as a Dairy Feed," by your paper to the "Cultivator" I would like to know where to obtain seed corn of the "Early Yellow Rose or Mortgage Lifter variety in quantity to plant fifteen or twenty acres.—G. P. A., Colusa.

The Mortgage Lifter corn and Yellow Rose are not in the market now, as the corn plant has been greatly improved since 1896. At present we are using the King Phillip, but have six varieties to try this coming summer and will report on them when the crop is harvested.

FEEDING SILAGE TO BULLS.

With the exception of green pasture grasses, silage stands pre-eminent as a food for bulls. Like other foods, it has its disadvantages, but its advantages are so great that the former are offset. For female stock, roots may take the place of silage and are oftentimes more efficient; but in the case of bulls, many breeders have found through sad experience that roots are very injurious to the male organs of the beast. Oftentimes silage contains such an abundance of corn grains to be too fattening in its nature for the breeding bull. In this case a smaller amount, supplemented with clover hay or some other food rich in protein should be fed. Immediately after a large feed of silage (like immediately after watering) the bull may be slow at service, but this can be no more than a minor objection.

The chief advantage to be gained in feeding silage to bulls comes through the succulence of the food. There is always an extreme contrast noticeable between silage-fed bulls and those receiving no succulent food. The bull that is fed silage presents a slick appearance; his hair is soft and silky, and his hide mellow and soft to the touch On the other hand, the bull fed otherwise wears a harsh coat of long hair over a stiff hide through the winter months. Now, when it is remembered that the hide and hair of a beast are an index to the condition of the inner organs of the body, there is considerable evidence that the digestive tract of the silage-fed bull must necessarily be in better working order. This renders the bull more healthful throughout, and the fresh sappy appearance results.

Oftentimes bulls are deprived of exercise. In this case silage proves even more advantageous. Two young herd bulls in charge of the writer have received very little food this winter except about 30 pounds of silage and ten pounds of clover hay per day. and their development has been wonderful. They have remained in excellent condition and are proving satisfactory in the breeding pen. In fitting bulls for show purposes the paunch seems to be greatly distended and all indications of feeding capacity are greatly improved by the liberal use of silage.

Bull calves are very fond of silage also, and all calves in my charge are now receiving all of this succulent food they will eat with relish—and such develonement of barrels and such a growthy sappy appearance as these youngsters present is difficult to imagine. One precaution we shall exercise this year in planting corn for silage, is that it shall be planted thick enough so the greatest amount of forage with the least amount of grain shall be produced. The grain shall be raised elsewhere, ground and added as the condition and requirements of the animal shall direct the judgment of the feeder. This will also prove advantageous in feeding the cows.—Hugh G. Van Pelt, in Jersey Bulletin.

THE HOG

The American hog has a virulent enemy in the editor of a paper at Big Springs, Tex., who proceeds to roast the great mortgage-lifter in the following caustic fashion: "The hog is the dadblamedest, split-hoofed long-snouted, bushy-bodied animal we ever saw. He can make a fellow madder than other animals that infest the premises. He will always squeal and muddy your pants when he knows you are trying to feed him. He will get into your garden through a knothole and destroy enough produce in three minutes to feed your wife and children for three months. He will pay no attention to a wide-open gate where you want him to go through, but will shovel out several cubic yards of dirt to make a hole into a place you don't want him to go. He is the biggest nuisance and most profitable on the farm. You will never know the trouble and pleasure of life until you raise hogs. They are a bother and a vexation to the spirit of man man while they live, but bring joy and contentment to the soul of man when they die at hog-killing time."

PIGS ON ALFALFA.

How many young pigs can thrive on a four acre piece of land, beginning 1st of March, and what shall I have to feed them to make them grow (not necessarily fat) until I have feed last of August.—H. N. A.

If you have alfalfa twenty pigs can be fed on four acres and keep them growing. The old rule was a gain of 1000 pounds to the acre for a season, and pork at 5 cents is supposed to net the grower $50 per acre for his alfalfa.

Of course shoats will need a little grain toward the end of the season to harden them, for alfalfa-fed hogs are extremely soft.

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BULL FOR SALE

Having sold my ranch I am forced to sell Golden of Biltmore 60082, a grandson of Golden Lad's. Golden of Biltmore is one of the best. *If not the best* sire on the coast several of his daughters less than two years old selling for over $200 each. Highest bidder for next sixty days takes him If everything is not just as represented, I will give anyone the *bull free of charge. I sell on merit.*
C. S. Burgess, Riverside, Cal.

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Offers for sale three richly bred heifer calves sired by Marigold's Exile King, out of good cows. Also a yearling son of the great cow Nettie Underwood, official test 10,992 lbs. milk, 668 lbs. butter in one year. For records and prices write
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The Los Angeles Limited
DAILY BETWEEN
Los Angeles & Chicago
66 HOURS VIA
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Malthoid Roofing
is delivered in solid rolls containing 216 square feet of roofing and the nails, cement, tin caps and directions for laying.

A ready-to-lay roofing

With the exception of a hammer, MALTHOID is all ready to lay. The process is so simple, any one can do it after once reading directions. It is much easier than laying a carpet and not nearly as troublesome or as tiresome as laying shingles.

Malthoid Roofing is made from a compound that will not dry out--a compound that is almost indestructible. This roofing is good enough for the highest class buildings, and low priced enough for barns, sheds, shacks, miners' cabins, etc.

Malthoid does not require a coating of paint—it is finished when laid and will last many, many years, resisting fire, overcoming the ravages of the elements and serving as a thoroughly water and weather-proof roofing.

Malthoid is inexpensive—a large roof surface can be covered quickly—it does not warp, shrink, crack, blister, flake off, run or deteriorate in any way.

A book of views of Lewis & Clark Exposition Buildings sent free on request.

The Paraffine Paint Co., San Francisco, Cal.
Agents and Dealers Everywhere.

Los Angeles Office at 313 No. Los Angeles Street

Profit in the Poultry Yard

BY MRS. A. BASLEY, HOLLYWOOD, CAL.

NEGLECT CAUSES FAILURE

It often surprises me that so many people fail in the poultry business. I think it generally arises from the neglect of little things.

"Little drops of water,
Little grains of sand,
Make the mighty ocean,
And the wondrous land."

An egg after all is but a little thing, but what a wonderful little thing it is! A wonderful provision of nature for furnishing every element necessary to the support of man, in the best proportions and in the most palatable form.

It seems as if the supply of eggs will never be sufficient to meet the demand, and with such a demand why should people fail in the business?

I. K. Felch once said that it is making a low estimate when we say that three fifths of our seventy million people under our flag will drink tomorrow morning coffee made palatable and nourishing by the use of eggs; two-fifths of this great throng will make their breakfast in part or wholly of eggs; fully half of this number will partake of a dinner the make-up of which has involved the use of eggs, and more than one-half of the population will eat for supper eggs in some form, tea-cake, custard, pumpkin pie.

It has been estimated that over two million dollars worth of eggs are annualy imported into this country. which fact does not look as if there is a prospect of overproduction within many years. The prospect in fact is bright for the successful egg producer, then why do so many fail?

At the Farmer's Institute last month at Gardena was a gentleman whose wife over two years ago had written to me from Denver, asking for advice about starting in the poultry business. I replied as fully as I could. sending her, if I remember rightly. a copy of the Los Angeles newspapers and the Cultivator.

Health was their first object and some out of doors employment that would bring in living wages.

They came, settled in Gardena, fortunately for them, for Gardena is an Eden for fowls, went into the chicken business, and succeeded from the first.

* * *

"Do you think there is money in eggs for market?" was one of the questions propounded at the Institute. This question was most satisfactorily answered by Mr. C. W. Stephenson, who stated that there was money in it for anyone who succeeded! He added moreover, that a great many failed, and that he himself had at one time nearly "gone under." After the Institute was over he and his good wife told me that they kept an accurate account of their receipts and expenditures, also of the number of eggs from the various pens, the amount of food eaten and many other interesting details.

"Our hens laid over fifty thousand eggs last year," said Mrs. Stephenson, "they averaged 136 eggs each."

"I have some of your stock," said Mr. Stephenson, "and that pen averaged a hundred and ninety-six and two thirds eggs per year. and," he added," there was one of yours that laid one hundred and five eggs in one hundred and ten consecutive days."

He also gave me some interesting facts in regard to the profits and expense of his fowls last year. He is only a novice, came to California in bad health, but has "grit" and is winning both health and a fair income. This year he intends trap-nesting all his fowls, discarding the unprofitable among them, consequently his returns will be much larger.

Amongst the interesting details by his books was the fact that each hen last year cost him $1.12½ for food including grit and shell. The average price obtained per dozen eggs for the year was 28 cents. The average net proceeds from each hen (good and bad layers together) as about $2.05. In making up these averages many interesting facts were disclos-

White Wyandotte Eggs
For hatching. Pure Dustin & Hallack strain. From 1st Pen, $3.50 per setting, 2nd pen, $2.50.
Mrs. S. H. Church, 505 S. Main St., Los Angeles

RHODE ISLAND REDS
Fine large stock, heavy layers, best of broilers. Eggs, $1.50 per setting.
J. D. Setzer, Northrup and Pedro Sts., San Jose, Cal.

White Rocks Exclusively
Limited number of young birds. Eggs from prize winning, producing strain, $2 per 15 or $5 for special mating. Write for circular.
Mrs. Rhoda E Durfee, 1110 W. 1st St., Santa Ana, Cal.

Banning Poultry Yards
White Leghorn and Barred Rock eggs for sale, $1.00 for 15, $4.00 per 100. Fertility guaranteed. Correspondence solicited.
Morris Bros., Props., Banning, Cal.

THOROUGHBRED YOUNG CHICKS
White Leghorns, 10c.
White Ply. Rocks, 12½c.
Wm. A. GREEN, Box 401, ANAHEIM, CAL.

Barred Plymouth Rocks
Standard Bred, Hawkin's Strain, $1.00 to $1.50 per setting of 14. Young chicks after March 1st
Mrs. Albert Miller,
1913 Ricardo St. Sta. A, Los Angeles, Cal.

Blue Andalusians
At Los Angeles, 1906, our strain in a class of 68 Andalusians with 16 birds won more firsts than all our competitors combined. Eggs, $2.50 and $3.00 per 14.
Blue Ridge Poultry Yards, 128 Avenue 32, Los Angeles

Buff Plymouth Rocks
A few fine cockerels $2.00 to $4.00 each. Eggs, $2.00 for 15. Very choice Eastern stock.
F. W. Tutin, Riverside, Cal.

Eggs from World's Fair Buff Leghorns $3 per 13, $7.50 per 100, $5 per 50. Commissioners' Cup for best display California bred poultry at Lewis and Clark Exposition. ***Barred Rock*** eggs, $1.50 per 13. ***LINDGREN BROS., Kingsburg, Cal.***

Buff Orpingtons
Pen headed by second prize winner at Alameda, '05. $2.00 per setting of 14 eggs.
MRS. ALBERT MILLER,
1913 Ricardo St. Sta A, Los Angeles, Cal.

S. C. WHITE LEGHORNS
I can furnish you with first-class eggs that will hatch strong, vigorous chicks, and give you satisfaction. $2.00 per 15, or $7.00 per hundred. Stock for sale. All eggs and stock purchased of me shall give perfect satisfaction. I make this a point.
Monte Vista Poultry Farm
L. D. Pettit, Mgr. *Corning, Cal.*

Buff and Black Orpingtons
Buff and Brown Leghorns
Indian Runner Ducks Bronze Turkeys
Eggs and Young Stock in Season
W. W. Bliss - ***Duarte, Cal.***

Eggs Wanted for Hatching
Our big adobe incubator brings the best results. Send us your eggs and we will return the chickens. Young Chickens and Turkeys Wanted.
Bamboo Poultry Ranch - Glendale, Cal.
AIKEN & CO., PROPRIETORS

Single Comb Brown Leghorns
Exclusively
Stock for sale and eggs for hatching. Eggs from first pen $2.00 per 15 eggs, second pen $1.50 per 15. Incubator lots for $6.00 per 100 eggs. They have always won first prize whenever shown. Large birds and heavy layers.
W. E. Mercer - - Ventura, Cal.

A POULTRY COLONY
NEAR LOS ANGELES
Is at present being formed for the purpose of mutual benefit. Situation unexcelled: plenty of good water, splendid soil and close to town. For particulars apply to
Anna L. Pinkerton
Realty Trust Company, 129 So. Broadway, Los Angeles, Cal.

Buff Wyandottes
Trios, $6 to $15. Cockerels, $3 and up.
O. S. Hofman San Jacinto, Cal.

Extra Large **White Wyandottes**
I have some of Hayes of Henleyville and some from the Dustin strain. Prices on application.
C. A. McDonald Beaumont, Cal.

EGG FOOD A·C·W IT FILLS THE BILL
A. C. W.
DRY EGG FOOD
The Latest Discovery in Feeding Hens
Many experienced and successful Poultrymen are feeding A. C. W. Egg Food dry and make great claims as to the excellent results obtained, besides saving of labor in mixing the food as a "mash." ***A. C. W. Egg Food,*** with other brands, was fed dry in the feed boxes, the result was that the hens chose A. C. W., eating greedily—cleaning up the food completely—whereas the other foods fed in competition were practically untouched.—Experiment of Mr. J. J. Naughton, Redlands.
Try A. C. W. Egg Food dry and watch results carefully.
Our A. C. W. Chick Food stands at the head of all Chick Foods—clean, bright, pure, no waste.
A. C. W. Bone Meal, Meat Meal, etc., made in our own factory. Call and see us and the plant.
Ask your dealer for A. C. W. Foods.
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Phones: Sunset, Boyle 3; Home, 6063

Emery's Pure Meat Meal
Don't believe all we say, but just enough to buy our Poultry Foods
Ask your nearest dealer for them and take no imitations
Emery's "B. B. & B."
THE PACIFIC GUANO & FERTILIZER CO. Successors to N.Ohlandt & Co San Francisco, Cal.

EGGS
Barred Rocks, White and Brown Leghorns, $5.00 to $6.00 per 100, $1 25 to $1.50 per 15. White Wyandottes, $7.00 to $8 00 per 100, $1.25 to $2.00 per 15. Reds, Orpingtons and White Rocks, $6 00 to $7.00 per 100, $1.25 to $1.50 per 15. Other kinds, prices on application. You can buy cheaper eggs than we sell, but are they good? Are they guaranteed? Ours are. Sole Agents Standard Cyphers Incubators.
Kloninger Bros. **838 S. Main St.** **Los Angeles**

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK
BUYS THE WORLD'S FAMOUS
EGG FOOD NO. 4
MIDLAND
IF YOU WANT EGGS
YOU WILL FEED NO OTHER
Used by all the largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders.
The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the GOLD MEDAL at the St. Louis World's Fair for greatest hatch, with 40 different makes of incubators in competition. How's that?
St. Louis, Mo., Dec. 8th, 1604.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A FILCHER, Commissioner.
And Now Comes New Reward for Merit:
Read the following telegram received from the Lewis & Clark Exposition at Portland:
"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."
WRITE FOR CATALOGUE 47—A BEAUTY
PETALUMA INCUBATOR CO.
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Buy eggs and hold them with perfect safety for high prices; our California Egg Preserver, sold under an absolute guarantee, will keep them in perfect condition; costs less than 1c a doz.; is simple and successful. Save the eggs from your own hens; buy from others; every dollar invested will double your profits. Fortunes are made every year by the big dealers; you can make $500.00 to $1,000.00 just as easily. Send $1.00 today for Egg Preserver and complete directions, and get started at once. Further information on request.

The Pacific Supply and Brokerage Company,
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At Eagle Dale Ranch. Home Phone Glendale 594, or address
Mrs. M. E. Brown,
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Chickens and Eggs

Having handled Poultry in this market for the past thirty years, we can give you the best results and prompt returns.

D. E. Allison & Co., Inc.
119-123 Washington St., San Francisco

White Wyandottes

Eggs for hatching from 5 pens of standard birds. 1st Cock, 1906 L. A. Show and other prize winners. $10 per 100, settings, $1.50, fertility guaranteed. Special matings and stock a matter of correspondence. ***Mt. Holly Poultry Yards,*** E. W. Preston, Prop., ***Hollywood, Cal.*** Sunset Phone, Hollywood, 901.

EGGS FOR HATCHING

from a heavy-laying strain of
SINGLE COMB WHITE LEGHORNS
I guarantee 100% fertile. Write for prices.
Golden State Poultry Yards, Lordsburg, Cal,
T. E. Mills, Prop. Home Phone 1720

100 White Leghorn Hens and Pullets For Sale

A Bargain. High-grade birds, large, healthy and vigorous, all laying and will pay you $1 per day profit right now. Only offered because we need the room. $1.25 each in any quantity. Write at once. **Eggs for Hatching.** High quality, low prices. First prize winners at Los Angeles and San Diego.
M. I. Hannahs, Sunnyside, Cal.

SONOMA-AMERICAN INCUBATOR

Send for large circular fully describing these machines.
Sonoma-American Incubator Co., - Petaluma, Cal.

$12.80 For 200 Egg INCUBATOR

Perfect in construction and action. Hatches every fertile egg. Write for catalog to-day.
GEO. H. STAHL, Quincy, Ill.

BARRED ROCKS
EXCLUSIVELY
Send for 16-page 1905 Catalogue
H. R. CAMPBELL
Box O PETALUMA, CAL.

Mountain View Poultry Ranch

S. C. White Leghorns—Heavy layers. Eggs, $1.50 per 15, $5.00 per 100.
Indian Runner Ducks—Males for sale. Eggs, $1.00 per 13, $3.00 per 0, $5.00 per 100.
Mrs. J. L. Updyke - Fullerton, Cal.
Successor to Jacob Kreger

Rose Comb White Leghorns
High Grade Buff Orpingtons
Varian's Poultry Yards
P. O. Box 666. Home Telephone 1886
895 N. Catalina Ave.. PASADENA, CAL.

White and Silver-Laced Wyandottes
White Plymouth Rocks
White Leghorns and Black Minorcas

Plymouth Rock and Wyandotte eggs, $2.00 per setting, $8.00 per hundred.

Leghorn and Minorca eggs, $1.50 per setting, $6.00 per 100.

I have been breeding thoroughbred poultry for over 20 years and have as fine stock of these varieties as there is on the Pacific Coast.

I also hatch and can supply little chicks from a dozen to a thousand from the above varieties delivered anywhere within 72 hours of San Jose. Prices on application.

J. S. Smith, Box 526, San Jose, Cal.
YARDS—CORNER MOORE AND CHAPMAN STS.

ed for instance the average net proceeds per hen for one breed per year was $2.25 per hen and the net proceeds of another breed was $3.43 per hen, while in the case of mongrels the net proceeds per hen was $1.50, proving to him that Standard bred hens are much more profitable than mongrels.

Mr. Stephenson told me that he had been following as closely as possible the directions for feeding and care of fowls given in the Cultivator that he had written to Berkeley for the bulletin on Chicken food, (Farmer's bulletin No. 164) which I have so frequently advised our readers to get,and that he mixed his fowls' food by one of the formulas in that. He said that it was a surprise to him to see how the eggs began to multiply in two weeks after commencing that feed and he thought it was to that he owed his success in getting eggs in the winter when eggs are always a good price.

I was more than glad to find that my "line-bred" fowls had fallen into the hands of a man who not only appreciated them, but who would continue to breed them on the same lines. I have since heard from another party who has some of the same strain that she purchased from Mrs. Durfee, one of our advertisers, that one of the pullets which she is trapnesting has twice laid two eggs in the same day.

Very satisfactory news to me who for seven years worked and studied over "line-breeding" and other kinds of breeding to promote a large egg yield. Others are now reaping the rewards of my labors, for I am not now in the business.

* * *

EDITOR'S QUESTION BOX

Liver Complaint. (Mrs. G. S.) Yuba City. Editor Cultivator—I have read the poultry page in the Cultivator for some time and have not yet found what I would like to know. And I will allow myself to ask you a question. My chickens have a disease which is catching. I have been feeding them wheat and corn this winter. By opening them I find they all have a big liver and some of them have little white, hard spots in it. They are mostly all young chickens, some of them go for quite a while before dying. I shall be very glad if you will inform me what to do.

Answer. Your chickens have liver trouble. It usually comes from feed-much starchy food, or a ration wrongly balanced. Too much corn will do it, or too much potatoes. Now to cure it put the chickens if possible on to fresh ground, give them more green food and more meat, also for a week give them sulphate of magnesia, half a teaspoonful for each bird in the drinking water. Or give each bird half a teaspoonful of castor oil. After this you must depend upon the better balanced ration, giving more green food, and making the chickens scratch and work to dig out the grain.

* * *

Muscovy Ducks. (E.McD., Hollywood.) Editor Cultivator—Will you kindly give me some information concerning Muscovy Ducks. Are they a good table fowl and do they mature rapidly? I was thinking of buying a setting of eggs, when some one told me they were a beautiful bird to look at, but not good for either laying or eating. What do you consider the best way to mark young chicks? Last year I used a punch. was very careful to take the piece of skin out that the punch cut and yet it grew together and I had just wasted time. I punched them the day they were hatched. Can you get leg bands small enough for little chicks.

Answer. Some people consider Muscovy Ducks good eating. I do not like them as well as goose or duck. They seem to have a fishy taste. They mature as quickly as a goose. They incubate their own eggs (thirty-five days) and make good mothers. They do not lay as many eggs as others and I found them cross to children. I always mark my chickens with a good punch. I do not like leg bands for little chicks, but have marked them at first with a dab of red paint on their heads, and before that wore off I sewed a small piece of scarlet worsted braid on one leg (a black braid on another brood.) I found the

Fairview Poultry Yards
SILVER LACED WYANDOTTES

Two pens, both headed by prize-winning cockerels; 1st at Los Angeles and 1st at San Diego. Four prize-winning females in pens. Eggs, $1.50 per 15.

WHITE PLYMOUTH ROCKS

Special mating, pen headed by Fairview Prince, a son of the best layer in our yards. $1.50 per 15. Five pens large MATURE hens mated to vigorous Cockerels, $1 per 15 eggs: $5 per 100. Eggs from these pens specially recommended for incubator hatching.

A. E. NELSON, EL MONTE, CAL.

SINGLE COMB WHITE LEGHORNS
Thorough-bred Stock. Eggs, $1.50 per 15
INDIAN RUNNER DUCKS
Eggs, 1.50 per 12.
Send for illustrated catalogue
John P. Boden, 638 Second Street, Watsonville, Cal.

Brown Leghorn and White Rock Eggs

For Sale, $1 per 13, $6 per 100, also two fine White Rock Cockerels at $2 each.
Willis F. Wiesmore, 835 High Ave., Redlands, Cal.

Indian Runner Ducks

Eggs for hatching from fine, healthy, thoroughbred stock. Egg, 75c per 13. **M. T. Taylor, 256 N. Eastlake Ave., Los Angeles, Cal.**

WILLARD POULTRY FARM, HYNES, CAL.
Mrs. F. T. Hungerford, Manager
INDIAN RUNNER DUCKS

At San Francisco show, 1905, I won 2nd and 3rd on young drake and 1st on young duck, with 3 entries. At the 1906 Los Angeles show, 1st on old drake, 1st and 2nd on young drake, 1st and 2nd on young and old duck and 1st on pen. Eggs—$1 for 13, $3 for 50, $5 for 100. Hens' eggs all ordered up to April 1st.

Black Minorcas White Leghorns
Eggs, $1 00 per Setting
Woodgates & La Mothe R. F. D. No. 2, Hanford, Cal.

The Stockton Incubator

Is now manufactured under new management and is in every way put up as a first-class machine. Our 1906 model is a perfect working incubator, economical to run and gives a fine hatch.

Winner of silver medal at Pan-American, also medal at California State Fair. Write for circular and information.

Stockton Incubator Co.
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$8.00 COCHINS $8.00
A TRIO
BUFF, BLACK or WHITE

Send for circular, giving undefeated show records. These are the best winter layers, finest table fowls, and by far the most healthy and hardy. Eggs, $2.00 per setting of 15. Prize winners, Eggs, $3

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Free!

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The Jubilee Incubator Company
Incubators Brooders Poultry Supplies
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The Jubilee Incubators and Brooders
are guaranteed to give **Business Results**
Described in our New Illustrated Catalogue
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Sunnyvale Santa Clara Co. California

FEED THIS MUCH AT OUR RISK

THIS IS THE MONEY BACK LINE

PROVE PURINA FEEDS ON OUR NEW SELLING PLAN We have arranged a plan for the introduction of PURINA POULTRY FEEDS throughout the Pacific Coast which will appeal to every poultry raiser who is looking for more eggs and more chickens. We take all the risk and agree to let you give our Feeds a trial *without cost to yourself.*

We have two of the largest Rolled Oat Mills on the Pacific Coast. This means that that we manufacture a large amount of Oat Shorts, Oat Middlings and Oat Groats. In each one of our Poultry Feeds we use a very large percentage of these *Oat Products* and it is on this account that we can claim more nutriment —better results—more eggs.

TRIAL OFFER

We will send (freight prepaid) four 40-pound sacks for four dollars. The assortment is as follows:

1 40-lb. Sack Purina Mash
1 40-lb. Sack Purina Scratch Feed
1 40-lb. Sack Purina Chick Feed
1 40-lb. Sack Acalfa Meal
ALL FOR FOUR DOLLARS

In each case you may feed down to the "money back line." If the feed is not satisfactory, just tie up the bag and write us. We will refund you your money and tell you what to do with the remainder at our expense.

Write us for samples and for other information.

ACME MILLS CO
PORTLAND, OREGON

HUSKINS' WHITE WYANDOTTS

Prize winners for two years, 1905 and 1906, at L. A. Eggs for hatching from standard bred stock, $1.50 per dozen, or if you mention Cultivator, will send thirteen.
A. W. Huskins, 713 Waterloo St., or 541 South Main St., Los Angeles.

Rhode Island Reds

Record making layers: average per hen, whole flock, 180 eggs for '05. $1.25 per setting, 2 settings, $2.00; incubator lots, $6.00 per 100.
J. S. ENGLISH, R.F.D. 112, Gardena, Cal.

BRONZE TURKEYS

Hart's strain. Winners of five firsts at Los Angeles Show, '06, and always winners wherever exhibited. Write for prices.
ED. HART, CLEMENTS, CAL.

White Plymouth Rock Poultry Ranch

Eggs for hatching from First Class Stock $6.00 per 100. $1.50 per setting 15 eggs
J. T. DAVIS, Prop. POMONA CAL.

Brown and White Leghorns

Prize winners at L. A. Show, '06. Eggs from good laying strains. Eggs, special matings, per 15, $2.00. Incubator lots, $6.00 per 100.
Hemet Poultry Yards, Hemet, Cal.

Blue Andalusian Eggs

$1.50 and $2.00 for 15, $7.00 per 100. Free range. I raised and sold cockerel winning first prize at late L. A. poultry show. Stock. *Mrs. J. S. Duff, 3145 S. Hoover St., Los Angeles, Cal.*

Rhode Island Reds

Fine stock of cockerels and hens for sale. Eggs, $1.50 per setting.
C. G. DAVIS REDLANDS CAL.

White Wyandottes

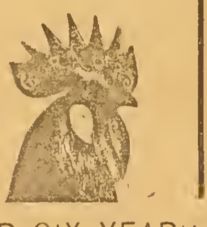
Eggs for hatching from standard bred birds, $1.50 per 13. Hens and Pullets for sale.
A. P. Robinson, 263 Prospect St., near Park, Riverside

Shade's Rhode Island Reds

Automatic Chicken Feeders for Sale.
Shade's Rhode Island Red Farm, San Bernardino, Cal

Buff Orpingtons and Barred Rocks

Standard Bred Eggs, $2 per 14. 3 sets, $5. Low prices on breeding stock.
B. M. Stone,
R. F. D. 6 Fresno, Cal.



FOR SIX YEARS
Albers' Black Minorcas

Have led in the shows every year, and they lead all breeds in egg production all the time. Eggs in large or small lots. Stock for sale Circular free.
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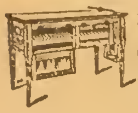
4849 MARMION WAY LOS ANGELES, CAL.



30 DAYS TRIAL
Buy From Our Factory—Save One-Third.
PRACTICAL INCUBATORS positively the best. Hatches more and stronger chicks. 10 YEARS GUARANTEE
Cat. free. PRACTICAL INC. CO., 720 S. 11th St. San Jose, Cal.

Why do you pay $5.00 to $8.00 per hundred for eggs for hatching when you can get just as good eggs from just as good stock from us at one half that price? Our stock is large and healthy. The hens lay lots of large white eggs that run as high as 98% fertility. We sell eggs in incubator lots only at $2.50 per hundred.
Avenue Poultry Yards, Ventura, Cal.

braid was elastic enough not to hurt them as they grew larger. I have punched hundreds if not thousands of chicks and never have known them to grow up. With ducks the holes always grow up, but a little puckered mark is left.

* * *

Leghorn Description. (L. A. M., Monrovia.) Editor Cultivator.—This is the first time I have written and am going to ask a few questions. Is charcoal taken from the stove all right for chickens? Is it necessary the hens should have a hot or cold mash? Does a mixed diet hurt them? Is not sand good for the floor of chicken houses? Please give me the description of a standard bred Brown Leghorn cockerel and pullet.

Answer. Charcoal from the stove is just as good as any other for fowls. It is not necessary for hens to have either cold or hot mash. If you have table scraps of bread, or meat or cooked vegetables pour a little water on them either warm or cold and mix some bran with it. The hens like this very much. A mixed diet with as much variety as possible is the best for hens. It makes them lay. For full description of Brown Leghorns you had better consult the Standard The Leghorns are one of the Mediterranean breeds. They are layers of medium sized white eggs; they have creamy or white earlobes, smooth, yellow legs, long, full tails. black in the male. The males are very handsome, the coloring being of the black red so greatly admired, whilst the females are of a modest brown. The comb of the males should be perfectly upright with five spikes, that of the female should droop to one side.

* * *

Roup. (H. C. C., Palmero.) Editor Cultivator—I have some Plymouth Rocks. Some are two years old and some are last spring's hens, that seem to be afflicted with breathing hard, they seem to have something the matter with their wind-pipe. I noticed one or two had a white, foamy substance come from the left eye, and another lumps on the right foot. They all seem to be so lazy. They all have something the matter with their throats. want to gap so much, and they open the mouth just as wide as they can. The droppings are of a light greenish color, and have dark spots.

Answer. I am sorry to say your fowls have roup. Some of them may also have gape worms in their windpipe. Give each one a pill of assafoedita, then pour a cup of kerosene (coal oil) into a pail holding two quarts of water, dip the head of the hen into this slowly, hold it in while you count three. Do this twice a day.

Give them plenty of onions chopped fine and mixed with bran. This will kill the gape worms and will cure the cold. Onions are very healthy for fowls.

THE BRONZE TURKEY

Ed Hart of Clements, Cal., is the author of a pamphlet on the above subject, which is interesting and instructive. It is generally conceded that the Bronze turkey is the largest and handsomest of the turkey family. The hen will lay often twenty eggs or more before becoming broody. The old toms weigh around 30 pounds, the hens 20 pounds, sometimes, however, they weigh much in excess of these figures.

* * *

In his article Mr. Hart makes a few suggestions on the care of turkeys which are practical and beneficial and are here given as worthy of careful reading and study. Among other things, he says:

"First, get good healthy birds. For breeding take the young and thrifty of both sexes. Procure these early in the season so that the birds may get used to their houses before they begin to lay.

We shall give briefly a few suggestions in regard to raising turkeys, their ailments and remedies, intended to help beginners. To those who are experienced and have been successful, it does not mean you.

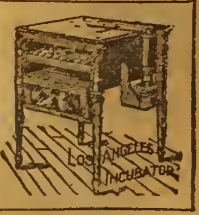
First, get good healthy birds. I prefer for breeders the young and thrifty of both sexes. These should be procured early in the season, to get used to their new home.

Standard Bred S. C. White Leghorns

EXTRA LARGE BIRDS AND HEAVY LAYERS. Eggs, $2 per 15; $8 per 100; $60 per 1000 from January until July only.
CAPTAIN MITCHELL SANTA BARBARA, CAL.
Author of "A Practical Poultry Plant for Southern California." $1.25 cloth binding, on sale by Calif Cultivator

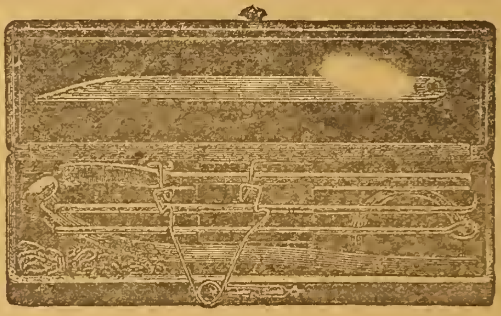
Dean's Pacific is an Incubator built on scientific plans and has all the latest improvements. Every machine guaranteed. "Facts From Experience" and Catalog for the asking. Address ***Dean's Place, 2509 Central Avenue, Los Angeles.***

SUCCESS IS ATTAINED WITH LOS ANGELES INCUBATORS
SEND FOR CATALOGUE
LEE'S LICE KILLER EGG MAKER | LARGEST POULTRY SUPPLY HOUSE IN THE U. S.
HENRY ALBERS 315 S. MAIN ST. LOS AGNELES



West Coast Chick Feed

Is the Best. Manufactured by West Coast Stock Food Co., 818 San Fernando St, (through to Alameda) Los Angeles



Caponizing Set

Double Your Profits by Caponizing.
Complete with Instructions, $2.50, Postpaid
STOCKMEN'S SUPPLY CO.
FRESNO, CALIFORNIA

Copyright 1905 by Leo W. Marden

MARDEN EGG FARM
HYNES, CALIFORNIA
Breeders of S. C. White Leghorns Exclusively

Fine Feathers alone do not make the profitable hen. Our fowls have the reputation of being ***extra large, handsome*** and ***extra heavy layers.*** Last season, our eggs averaged over 95 per cent. fertile. ***Remember***—In getting eggs from us, you do not get them from the general runs. We have but one grade of eggs to sell for hatching and those are from our breeding pen composed of only the choicest fowls, selected from hundreds that are ***bred to lay.*** Hens that approach the ***200 egg record.***

Price of Eggs—$1.50 per 15, $5 per 100. ***Send for Illustrated Catalogue. Address,***
LEO. W. MARDEN, Manager

LAYING HENS

We have a few choice 1½-year-old Thoroughbred White Leghorn hens, which we are offering at a sacrifice In order to make room for our young stock we are offering these fowls at $15.00 for 12 hens and 1 rooster or $100 per 100.
We also have a number of 5-months-old pullets, also of the same variety, on which we can name you the same price. If your stock needs renewing, send in your order at once, as they are going fast.
We have a Hatchery of 50,000 chicks per month capacity, from which we are making shipments daily to all parts of the Coast. If you need any just hatched chicks have your order booked at once, so as to get them on the date desired. Our price for just hatched chicks is $7.50 per hundred f. o. b. Petaluma.
We manufacture the famous MUST HATCH INCUBATORS AND BROODERS and a complete line of poultry supplies of every description. We cater to the best hatching egg trade on the Coast.
Before purchasing write for our new illustrated Catalogue B which contains descriptions, prices, etc., of all our goods.
Must Hatch Incubator Co., Petaluma, Cal.

A Pedigreed Flock of Bronze Tuıkeys.

Leave poults on the nest until they run from under the hen. Dust hen and poults with Buhach when taken from the nest.

Food that is good for young chickens is also good for young turkeys. Cornmeal with about one-fourth wheat bran, well baked (even if burnt a little, so much the better) and fed dry, with a little coarse sand mixed in, makes the best feed I know of until they are 3 or 4 weeks old; at this time commence feeding clean cracked wheat or whole wheat until they get big enough to hunt their own food. They will do well from the start on clean cracked wheat alone; but whatever you feed, see that they get plenty of grit or coarse sand. Watch them; attend to their little wants; be patient and observing and success is yours, whether it be for pleasure or profit.

Eggs boiled hard and chopped fine with the shells, and mixed with the bread for the first few days, gives them a good start. Feed five or six times a day for the first few days, until they can be let out with the hen. Make any change of feed gradual.

Diseases will come. If the little poults should get diarrhoea, give ginger tea until relieved. Lime water is also good for them to drink . A decoction of blackberry leaves or roots is good, also.

For gaps, give a few drops of turpentine mixed with soft feed.

For sore mouth, clean off the canker and apply tincture of iron or tincture of iodine. To swab the mouth with bluestone water is a good remedy. When thus afflicted, give them the best stimulating food.

For curl toe, give a teaspoonful iodide of potassium to a quart of drinking water, for a few days, and coop on high, dry ground. Also dip their legs and feet in coal oil and wipe dry.

Chickenpox or sorehead may be treated first by giving the whole flock a tablespoonful of Epsom salts in a gallon of water or feed. In addition to this take equal parts of pulverized table salt, bluestone and lard, mix well and grease head and face of fowl.

Indigestion is often called cholera from their excrements being yellow. If treating a full grown bird, give from one to two teaspoonfuls of Jamaica ginger in three or four tablespoonfuls of water. A piece of bluemass the size of a hazel nut is also good.

A good remedy for indigestion and many other complaints in grown turkeys is to scrape a piece of common soap fine, sprinkle it with red pepper (all it will hold). roll up in a piece the size of a cherry and give.

A chew of tobacco put down an ailing turkey's throat will often give a new lease of life.

At the latter end of summer, put a little bluestone in their drinking water, to keep them in a healthy condition.

On the approach of cold weather and just before the first storm, a soft feed, with red pepper, will help to ward off many a disease that often happens at this time.

Crop Bound.—In bad cases take a sharp knife, cut a slit in the crops to insert a teaspoon, by which clean out the contents of the crop; then wash out with a little warm water containing half a teaspoonful of baking soda to a pint of water; then sew up.

Water Crop.—Empty crop by holding up the legs, head down, manipulate the crop; then inject a little warm water containing 6 drops of carbolic acid to a pint of water; rinse out and empty again. Then give in their drinking water 10 drops of nitric acid to ~ pint of water.

In dosing the turkey, throw the head well back, open the mouth and feed with a syringe or tube. (Give half-grown birds one-half the dose.)

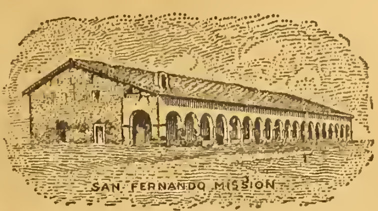
White and Buff Wyandottes
Prize-Winning, Egg-Laying,
Wealth-Producing Strain.
M. E. DILLINGHAM, SAN GABRIEL, CAL.

WHITE AND BUFF **Leghorns**
Old and young stock for sale. Eggs
after Janua'v 1. rite for prices.
J F. Sarmento, R.F D Box 4, San Leandro, Cal.

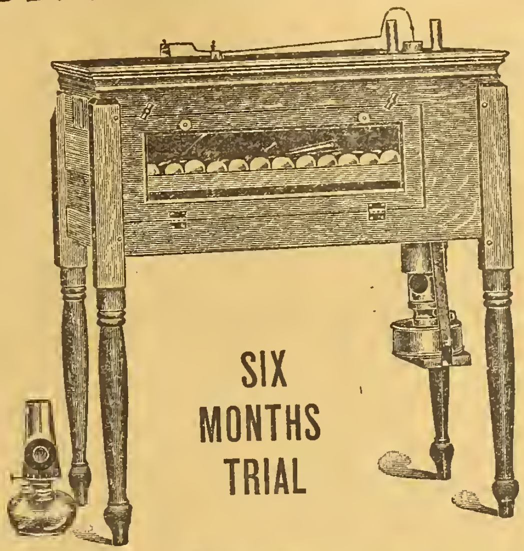
Young Half-Wild Turkey Gobb ers For Sale
Turkey Eggs from pure bred
Mammoth Bronze, $4 per 13
Mrs. N. Frank Morse - Fullerton, Cal.

White Plymouth Rocks
First class stock. Eggs, $1.00 per 13, $2.00 per 30.
Indian Runner Ducks—$1.00 per 15, $2.00 per 33.
A few ducks for sale. **H. S. Thompson, 125 W. Avenue 54, Los Angeles, Cal.**

THE FEATHERLEY FARM ORPINGTONS
Over 30 prizes, specials and cups in **Buff, Black and White Orpingtons** on 27 entries this year at San Francisco, San Diego and Los Angeles. Bred for utility and egg purposes, as well as prize winning qualities. Eggs from $2 to $3 a setting. Write for free mating list, describing my ten prize yards.
P. L. Harley, Box C, Redlands, Cal.



Mission View Poultry Ranch
Largest Breeder of
WHITE WYANDOTTES
on the Pacific Coast
Buff Cocnin Bantams and One-Quarter Wild Mammoth Bronze Turkeys Winnings at la e Poultry Breeders Society Show on my stock: 27 ribbons, 3 special ribbons, silver cup and Qu en incubator
Mrs. C. D. Hubbard, Box 282, San Fernando, Cal.



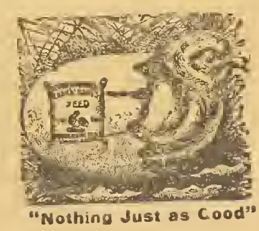
Poultry and Eggs Wanted
This sign you will see hanging outside of a merchant's store in nearly every town on the coast and it, in a measure, must convince you that there is money in the poultry business, and the
SIX MONTHS TRIAL
Chatham Incubators
will assist you in making money. Any responsible person can get a genuine **Chatham** and have SIX NONTHS TO PAY FOR IT—what is the use of you paying out money for an Incubator when you can make it pay over and over again for itself?
I can give you hundreds of testimonials from customers all over the Coast who purchased Chatham Incubators and Brooders last season on our ON TIME PLAN, and are thoroughly satisfied with them. The manufacturers fully guarantee every machine. Write me for our catalogue and some useful hints on poultry raising—it will be mailed to you free.
Geo. W. Foott, Box 2040, Portland, Ore.

Excelsior Dry Chick Food
Will raise 98 per cent of your chicks. **Price, $3.50 per 100 lb.**
—Excelsior Egg Food—
Will make your hens lay eggs. **Price, $2.00.**
Our assertions have been proven by those that use them. The live articles will do all we claim. All we claim is **results.** Results produce Chicks and Eggs. Chicks and Eggs produce **cash.** Cash is what you raise Chicks and Eggs for. Are we right? We will prove it if you use them.
Del Monte Milling Co.
242 Central Avenue - - Los Angeles, Cal.

Chamberlain's Perfect Chick Feed

"Nothing Just as Good"

World's Chick Feed of To-Day. The only original Dry **Chick Feed.** All others are worthless imitations. **Chamber-lain's Perfect Chick Feed** was used exclusively at the great St. Louis World's Fair during the 7 months. This the highest comp liment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.
CHAMBERLAIN'S PERFECT MASH EGG FEED,
THE WORLD'S GREATEST EGG PRODUCER.



"Nothing Just as Good"

GERMAIN SEED CO.,
Pacific Coast Agents. LOS ANGELES, CALA,
SPECIAL PRICES ON TON LOTS.
Distributing Agents: FREDERICK BROWN, San Jose; CHAS. B NEARPASS, San Diego; CHANNEL COMMERCIAL CO., Santa Barbara and Ventura.

Veterinary

BY DR. W. J. OLIVER,
318 East Second St., Los Angeles

VETERINARY SURGEON NEEDED

Editor Cultivator.—I have a horse which had a shoulder bruised several weeks ago. It festers and I opened it three times. Pus does not seem to gather any more but the swelling around the sac remains hard and sensitive. There seems to be a growth on the bone underneath. What should I do for it? Answer in Cultivator. H. J. C., De Luz.

You must have the fibrous growth dissected out. This is the quickest and best way to get rid of bunch. Then use a solution of sugar lead and sulphate zinc of each two ounces to quart of water.

COCOANUT MEAL

Editor Cultivator—Will you tell me the feeding value and also the fertilizing value of cocoanut meal when fed to cattle. A. A., Sierra Madre.

The digestible nutriments and fertilizing constituents in cocoanut meal is tabulated as follows:

Dry matter in 100 pounds 89.7; digestible nutriments in 100 pounds, protein 15.6; carbohydrates 38.3; nitrogen 32.8; phosphoric acid 16.0. potash 24.0.

Cocoanut meal has the reputation of producing fine butter of considerable firmness and is therefore recommended for summer feeding to the dairy cows. The fertilizing value of the meal is shown in the table given above.

Pomona is to have a new ice plant, With a capacity of thirty tons daily.

The State Board of Health bulletin for January contains some interesting reading on diseases in California. One item is this: "Of all who died of tuberculosis in Southern California 4.1 per had been in the State less than a month, altogether 12.7 per cent. less than 3 months, and altogether 17.3 per cent. less than 6 months. In Los Angeles 16.8 per cent., and in the other counties 18.3 per cent. of the total victims of tuberculosis had lived in California less than half a year.

In Southern California the departure of February was somewhat after the order of the usual March in the East. In Upland we had snow, sleet, rain and a biting cold northwest wind. Thursday morning we had a very white frost, but no damage seems evident.—Upland News.

The San Diego Postoffice was robbed Monday morning, the safe being blown open and over $10,000 in money and stamps taken, more than half of which was in gold coin.

One of the largest and best real estate firms in San Francisco, Chas. F. O'Brien is advertising the famous Gridley Colony in this paper. Write to him, Dept. 47, No. 30 Montgomery St., San Francesco Cal., for free information.

In their new quarters on Market Street the big San Francisco firm of Woodin & Little are better than ever prepared to furnish their customers the very best machinery in all lines pertaining to the farm and ranch. Their advertisement appears in this issue and our readers can be assured of the best of treatment. Write them for catalogues and prices.

Judge T. E. Orr remarked at the recent San Francisco show that the White Wyandottes exhibited by the Capital Avenue Poultry Farm, of San Jose, were amongst the whitest of the whites which he had ever seen. He has also written in the Reliable of the quality of these birds which he says would be strong competitors in Madison Square. Mr. Martz certainly has fine birds as the writer, who has seen them, can testify.

Pascal Dubedat & Co., 218 California St., San Francisco, Cal., dealers in Imported Sublimed and Powdered Sulphur are advertising in the Cultivator and those who want the very best sulphur for bleaching and spraying fruits and vines should write them for prices.

No creamery appliance attracted more attention at the National Dairy Show held in Chicago, the closing week of February than one or two models of milking machines. Owing to the fact that all cows brought to the show were blooded their owners were reluctant about allowing them to be experimented with for machine milking.

Half of the success in poultry comes from having houses, yards and appliances convenient, also suitable to the comfort of the birds. Such a yard we recently visited at Santa Ana. It is that of Geo. H. Randall. His houses are mostly portable and the runs large. As the houses need cleaning they are moved from place to place and the former ground is spaded up left to purify till the house is again, some months later put over the same ground. The pens are 40x80 feet and the houses 6x8 feet which accomodate about 40 birds. One feature worthy of note is the suspended perches. No chance of harboring mites.

Mr. Randall pins his faith largely upon, White Leghorns, but at the same time has some prize winning Buffs and W. C. Polish as was proved at the recent Los Angeles show.

ARE YOU READY FOR HARVEST

How about it?

Old Mother Earth, the sun and the showers, the dews and the winds are doing and will do their part to produce the wheat and oats and rye and barley that go to make a bountiful harvest.

Are you doing *your* part.

Are you getting ready to *harvest* the crop after it is grown?

Do you know *how* you will cut your grain?

Are you sure you will harvest it to the best advantage—with the least loss of grain, the least waste of time, the least trouble and worry and expense?

These are mighty important questions, for a large share of your *profit* depends upon them.

It's not too early to begin to think about them.

With high priced land and high priced labor, you need to get every cent from every acre you cultivate.

Help will be scarce and expensive; therefore, you need a harvesting machine that will save you the most labor.

Harvest days are few; therefore, you need a harvesting machine that will save you the most time.

Grain is worth money; therefore, you need a harvesting machine that will save you the most grain.

You can't afford to run risks.

You can't afford to take chances.

And you don't have to.

Take an hour or two, now, before you get too busy and talk to any agent of the International Harvester Company of America, and find out about the International line of harvesting and haying machines for 1906.

You'll be interested whether you buy or not.

* * * *

Buying a machine of any kind for use on the farm is not as simple a matter as it may seem.

You can "size up" a farm and know pretty accurately how much an acre you can afford to pay for it, but unless you are a mechanical expert you can't judge a machine in the same manner.

You have to take other things into consideration. For example:

You need to know something about the design—the mechanical principles—how the machine works.

You need to know something about the materials used in it.

You need to know something about the skill used in its construction.

You need to know something about the responsibility of the man behind it and about the machine's reputation.

The International Harvester Company line of machines for 1906 will satisfy you on these points—and on every other point that you may bring up.

* * * *

Bigness is not necessarily a merit in itself.

If you're buying a horse you don't care very much whether the man who raised it, raises one colt a year or 500.

But you know that the man who makes a specialty of horse breeding is more likely to raise a hundred good colts, than is the man who goes at it in a hit-and-miss, haphazard manner.

It's the same way with farm machines.

You don't care whether a manufacturer makes 1,000 or 100 000 of them, just so the *machine satisfies you.*

But there's this to take into account:

The first harvesting machine was largely an experiment.

For fifty years inventors and manufacturers continued to experiment, making changes and improvements, adding this and taking away that, until finally a half-dozen harvesters began to stand out head and shoulders above the others.

Why do you suppose that was?

HOW did it happen that the Champion, the Deering, the McCormick, the Milwaukee, the Osborne and the Plano increased in popularity and sales so much more rapidly than the hundred and one other harvesting machines that have been put on the market at various times in the past 50 years?

There is only one reason for it.

They met the demands of the farmer, and satisfied his needs.

In the expressive language of the day, "they made good." They are better today than ever before; they do better work and give greater satisfaction.

And here are the reasons:

1st.—The mechanical principle is right.

The manufacturers of the Champion, the Deering, the McCormick, the Milwaukee, the Osborne and the Plano, by *co-operation* are able to include in their respective machines every device, every invention, every mechanical principle yet discovered that tends to make a harvesting machine *do better work.*

By co-operation they are able to maintain such experimental shops as the world has never seen before, making certain that every improvement and every device that mechanical genius can contrive will be employed in their line.

2nd.—The materials are right.

By co-operation they are able to own, control and operate their lumber camps, their own saw mills, their own coal and iron mines, their own coke ovens, their own steel mills, relieving them of the necessity of depending upon the uncertain and fluctuating steel markets, coal markets, lumber markets, etc., for their raw materials, and insuring them at all times an abundance of materials which they *know* to be right. These are added reasons for the superiority of these harvesting machines.

3rd.—The workmanship is right.

The demand for these six leading makes of harvesting machines enables their manufacturers to maintain manufacturing plants of the highest efficiency and to employ workmen of the highest skill—factories and workmen which could not by any possibility be maintained to supply a small demand.

4th.—Their reputation is right.

The fact that so many farmers cannot be persuaded to buy any other,—the fact that so many farmers continue to buy them,—the fact that they are considered the standard wherever grain is grown in every part of the world is sufficient indication of their reputation and their reliability.

* * * *

You probably need one of these harvesting machines.

You cannot afford to begin harvest with a machine that is liable to break down and cause you several days' delay.

You cannot afford to use a machine that loses a few stalks now and then and a whole sheaf here and there, for a little leak like that eats into your profits at a surprising rate.

Go to the dealer *now*, and get which ever catalogue you want.

If you don't know an International Dealer—write to nearest branch house.

International Harvester Company of America, (INCORPORATED) **Chicago, Illinois.**

WESTERN GENERAL AGENCIES: Denver, Colo., Portland, Ore., Salt Lake City, Utah, Helena, Mont., Spokane, Wash., San Francisco, Cal.

International Line—Binders, Reapers, Headers, Header-Binders, Corn Binders, Corn Shockers, Corn Pickers, Huskers and Shredders, Corn Shellers, Mowers, Hay Tedders, Hay Rakes, Sweep Rakes, Hay Loaders, Hay Stackers, Hay Balers, Knife Grinders, Gasoline Engines, Pumping Jacks, Manure Spreaders, Weber, Columbus and Bettendorf Wagons, Binder Twine.

Queries and Replies

MUSHROOMS

"Constant Reader," San Martin, is advised that we have lately published several articles on mushrooms. For further information write to the Dep't. of Agriculture, Washington, D. C., for the latest bulletin of the subject, by Prof. B. M. Duggar.

RE-FORESTATION

To H. C. M., and others interested in re-forestation, we would advise writing to the "Forest Service, U. S. Dep't of Agriculture," Washington, D. C., regarding their co-operative offer whereby it places its trained foresters at the disposal of those who wish to establish plantations of forest trees.

BENCH GRAFTING WALNUTS

Editor Cultivator—How is bench grafting of walnuts accomplished? Is it now too late? Any information on this subject through your columns will be appreciated. Subscriber, Anaheim.

It is now rather late for bench grafting and it is the most expensive method practiced. We do not think it either profitable or desirable in this climate and would advise doing all such work in the field.

GOPHER AND SQUIRREL POISON

Editor Cultivator:—J. R. M., El Cajon asks for gopher and squirrel remedy which I am pleased to answer with your permission. I have the best success with strichnine crystals on a small piece of orange applied in its runway covered to exclude the light, being careful to keep the dirt from soiling it. Have tried poisoned raisins, carrots and traps, but the orange beats them all. Poisoned wheat is a success for squirrels. H. S., Riverside.

BUDDING WALNUTS

Editor Cultivator:—Please tell me through your paper how to bud walnut trees. I am quite successful in budding other trees, but never have been able to get a bud to grow in a walnut. Subscriber, Toluca.

On Jan. 26th we published complete directions for walnut budding, covering one and a half columns of space. On Feb. 9th under "Wooly Aphis," the plate bud was described in detail. We cannot re-publish until the proper season next year.

ORANGE RUST OF BLACKBERRY

The blackberry canes submitted by "Moneta Subscriber" last week, were sent to Prof. R. E. Smith, of the State University, and he replies as follows:

"Your subscriber's blackberry vines, sample of which I have just received from you, are affected by the so-called "Orange Rust," a serious fungous disease of this plant.

"There is no remedy for the trouble in plants once affected, as the fungus is perennial; i. e., it grows down through the stems into the roots and is thus impossible to reach with any treatment. The best course of treatment is to spray the patch heavily with Bordeaux mixture, inorder to check the further spread of the rust, and either now or in the fall, cut out the affected canes and let new ones come up. If the vines are badly affected one can only pull them out entirely and start new. The disease is not always very destructive, and berry patches are often seen which bear well, even when a good deal of rust is present."

OUT OF OUR LINE

Editor Cultivator.—Can you send me the plan of a three-horse evener to work on a tongue? R. B. H., Tulare.

You will find what you want at some farm Implement store, in Hanford, doubtless. We can not give you the plan.

FOUND $50.00.

A. D. Rezendes, a poultryman living near Tomales, bought a sack of **Coulson's Special Dry Chick Feed**, and when he opened it he found $50.00. There are several more of these prize sacks floating around the country somewhere.

ADVERTISING RESULTS

The test of a paper's value as an advertising medium lies in the results it brings.

It is the aim of the Cultivator to encourage a trial advertisement of those who have not heretofore tried the paper. The growth of advertising in this paper is largely due to the fact that we give our advertisers the very best results.

The following letter, one of the many received by this office, is a handsome testimonial to the merits of the paper as an advertising medium:

Loomis, Cal., March 2., 1906.

California Cultivator,
Los Angeles, Cal.

Gentlemen: Our advertisement in the Cultivator is bringing in about fifteen letters a day; so we enclose another advertisement.

A. Mitting, Mgr.
California Carnation Co.

The Imperial Nursery Co.. of Imperial wishes to purchase a lot of Red Gums. See their advertisement.

Have you noticed Dillingham's card advertising prize-winning strains of White and Buff Wyandottes?

D. E. Allison & Co., of San Francisco, will buy your chickens and eggs and give you good treatment. See their card on poultry page.

Lindgren Bros., of Kingsburg, were awarded commissioners' cup for best display of California bred poultry at the Lewis & Clark Exposition. They are among the permanent advertisers in the Cultivator.

Golden Crest Poultry Yards

White Leghorns—Eggs, 50c per setting, from pens of Petaluma's best laying strain. $3.00 per 100.

Barred Rocks—75c per setting.

Prize winning **White Crested Black Polish** my specialty.

Geo. H. Randall
C St., Santa Ana

WHITE WYANDOTTES

200-250 Egg Fowls **16 Prizes San Francisco**

Scored by T. E. Orr, eminent Eastern judge, our birds swept the deck at San Francisco.

Unequalled on the Coast as layers and exhibition fowls.

Settings and Incubator Lots; Pens and Cockerels for sale.

Beautifully Illustrated Circular Free.

Capitol Avenue Poultry Farm
A. L. R. Mantz
Rural 21, Box 98K San Jose, Cal.

Irrigating Hose

We Make It by the Mile

1203 Canvas Double Filled
1¾ Inches
2½ "
4 "
6 "
9 "
13 "
Every Inch Good

Something New

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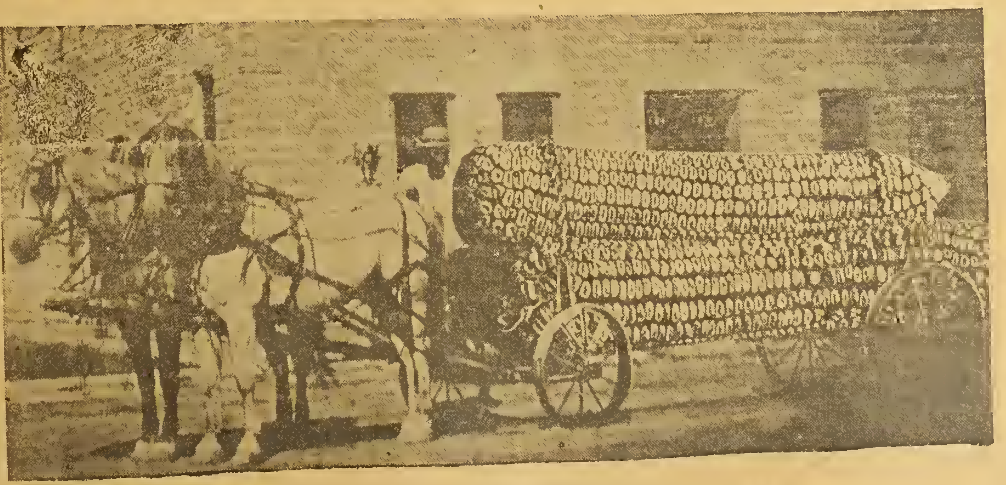

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Household Department

BATTLE HYMN OF THE REPUBLIC.

When the people announced the other day, the serious illness of Julia Ward Howe, memory went back to the days of the Civil War when the "Battle Hymn of the Republic" was written in the fall of 1861, just after Mrs. Howe had attended a review of union troops near Washington. It was Mrs. Howe's desire to give more inspiring words to the "John Brown" melody.

If the author of the "Battle Hymn of the Republic" lives until May 27 next she will be 87 years old.

The "Battle Hymn of the Republic" was written to the melody of "John Brown's Body." The words follow:

Mine eyes have seen the glory of the coming of the Lord;
He is trampling out the vintage where the grapes of wrath are stored;
He has loosed the fateful lightning of his terribly swift sword;
His truth is marching on!

I have seen him in the watchfires of a hundred circling camps,
They have builded him an altar in the evening dews and damps,
I can read His righteous sentence by the dim and flaring lamps;
His day is marching on.

I have read a fiery gospel writ in burnished rows of steel,
"As ye deal with my contemners, so with you my grace shall deal;
Let the Hero, born of woman, crush the serpent with his heel,
Since God is marching on!

He has sounded forth the trumpet that shall never call retreat;
He is sifting out the hearts of men before his judgment seat;
Oh, be swift, my soul, to answer Him, be jubilant, my feet!
Our God is marching on.

In the beauty of the lilies Christ was born across the sea,
With a glory in his bosom that transfigures you and me;
As he died to make men holy, let us die to make them free,
While God is marching on.

The Proposal

The garden was wonderful in its fresh spring beauty, the delicately tinted lilacs, the fruit trees that were one immense bank of bloom, and the sunshine that played upon it all, throwing some of the colors in high relief and shading others, glowing richly in the soft shadows; tender and whisperings were all that broke the silence.

Jean de Gace, as he opened the gate, drew in a long breath of happiness. From where he stood he could see the green sweep of the lawn, the graceful trees and winding walls; his heart grew light, and smiling, he bowed deeply to this paradise.

A white skirt fluttered near the edge of the little wood, moving with a quick rustling motion; he recognized the parasol, the dainty, rose-colored waist and the white skirt, and as the owner of the parasol turned the corner he caught a glimpse of a beautiful face.

M. de Gace felt happier and younger than ever; his forty-five years slipped away from him as a dead leaf from its branch; he did not know what it was to grow old. He had married very early in life, and his wife, whom he adored, had died soon after the birth of their son; and since then, on account of the passionate eagerness with which he had thrown himself into his work, he had scarcely perceived the passing of the time. There was no touch of white among his brown hairs nor in his short moustache, and his step was quick and alert.

But during the last year, since the Mainfroys had moved into the country house that adjoined his own estate he had grown younger than ever; he had scarcely noticed that his son Robert had left for Japan, as attache to the French embassy, nor that Miss Maud, his finest mare, had suddenly gone lame. He was absorbed in one dominating thought that he was in love with Helen Mainfroy, and that, in all probability, should he ask her hand, it would be given him.

Suddenly she called to him.

"I have just been down to see your horses run; Norfolk is simply superb."

M. de Gaee was enchanted, not with the compliment bestowed upon his horse, but with the bright joy of Helen's smile. He looked longingly at her, delighting in each fresh aspect of her beauty and then feeling that it was for him to make some reply, he asked:

"Is your father here?

"Yes," she answered, conscious of his emotion, " he is settling his accounts in the summer house. I heard the little tinkle of a bell by the garden gate, and thinking it was you, I came to meet you."

"How good of you—Guess, if you can who dropped down upon me yesterday, fresh from the skies. or rather from another world?"

"From another world?"

"Yes; it was Robert, my young diplomat. I didn't expect him for another month, but he came through without stopping, and arrived without even sending me a telegram. He seemed to think it was an everday affair to come back from Japan."

"I shall be very glad to meet him," said Helen, lowering her parasol.

"One reason of my coming here now was to ask your permission to bring him to call to-morrow," said M. de Gace slowly. He was silent for a moment, if to give more emphasis to his words, and then went on, his words coming crisply and his eyes fixed upon the ground.

"Robert is now definitely settled, his career is established, and he has nothing to do but to go ahead; he was still a good deal of a boy when he left for Japan, but he has come home a man; I do not need to worry any longer about him. And it is this fact that has decided me to take, with your father's permission, a step with whose nature I have already acquainted him."

In spite of himself, the man looked up to watch the effect of his words; Helen was standing motionless with the quick color playing about her cheeks. Her little hand trembled upon the handle of her parasol as she traced vague patterns in the garden walk.

M. de Gaee longed to take possession of this little hand to tell her how much he loved her and ask her if she would be his wife. He felt instinctively that the moment was divine. Had he been younger, he would have done it without pausing for an instant, but certain ages have their certain bashfulness. He was silent, timid and trembling as if he had been only twenty.

"You know we are always glad to see you," said Helen simply, breaking the long silence.

"Very well, then, I will come tomorrow. I will not disturb your father now."

"Why, are you going already?" We have scarcely seen anything of you lately."

"You are good to say so."

Yes, Helen was good, she was beau-

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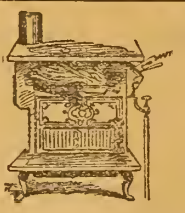

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tiful and she was charming. M. de Gace kept repeating the words to himself as he walked beneath the tall, spreading elms, where, at the end of the driveway, a groom stood waiting holding his horse. With naive care he constantly assured himself of her love, remembering how she always came to greet him, and her smiles and soft handshakes. Was it, after all, only sympathy that she felt for her lonely, agreeable neighbor? But, no, she had blushed just now, she understood the hidden meaning of his words, and she had said "tomorrow." Besides, he had already spoken to Mr. Mainfroy, perhaps Helen's father had told her.

He stopped short, reining in his horse suddenly.

"What if she only wants to marry me because I am rich and the Baron de Gace."

He drove the thought away with a quick exclamation of anger, knowing it unworthy of the girl he loved, and touching the horse with the spurs, he galloped home. As he turned the corner, he saw his son Robert flashing down the road in front of him, on his bicycle, and from his seat upon the splendid animal M. de Gace compared simself with his son, thinking rapidly:

"On the whole, I am better than he."

* * *

The next day as the father and son entered the Mainfroy's parlor, they surprised Helen arranging her flowers. She had not looked for them so soon, and had not heard the cariage and supposing herself alone for some time yet, she was still dressed in her loose, morning dress, her arms bare and her hair simply tied with a ribbon. M. de Gace uttered an exclamation at the lovely picture she made among her flowers.

"Mercy me, let me run away!" she cried, seeing them stand suddenly before her.

"Before you go, please let me introduce my son," said the baron smiling, "and please forgive us for coming so soon. We really couldn't wait."

Blushing rosy red, Helen lifted her eyes to those of the young man, standing so tall and straight before his father. Their looks met and lingered. A moment later she had disappeared closing the door behind her.

"Great heavens!" cried Robert. "how charming she is, and how pretty.

"You think so?" queried his father.

"Yes, indeed, and I understand better now what you seemed to be hinting at yesterday, dad; I assure you that if this is the lady of your choice, I am more than ready to fall in love with our plans. But do you suppose she would be willing to go off into foreign lands? For my career—"

He was interupted for just then M. Mainfroy entered.

"My daughter has told me, my dear baron," he began heartily, "and I understood immediately. You know what a daughterly affection she has for you and knows what a fine man you son is, we will speak frankly, will we not? We must wait a little to see how the young folks get along together, and then—"

M. de Gace looked at his son, whose eyes were shining brilliantly, and without a single muscle of his face betraying him, he felt the agony in his heart.

"Thank you sir." he said quietly, "for your kind words about Robert, I hope you will allow him to come here often, for I think they will please each other. Robert's a good fellow—"

And he added simply.

"And Miss Helen is an adorable young lady."—Francois de Nion, in Washington Post.

Try this for a winter dish that will please all: Pop some corn nicely and roll it as fine as possible. Mix a pint of the corn into a quart of sweet milk; add a small piece of butter and a teaspoonful of salt, beat two eggs with enough sugar to sweeten the milk; mix all together and bake for 20 minutes. Serve as pudding.

When cleaning up the room place a light covering over the winter plants to keep the dust from settling on them.

It is a good plan when sweeping and dusting the rooms to have the doors and windows open—the dust goes out and fresh air comes in.

Cookery Recipes

COCOANUT MILK CHOCOLATE

Heat a quart of milk in the double boiler, and when very hot stir in four heaping tablespoonfuls of grated unsweetened chocolate, moistened with a little cold water; allow it to boil and thicken; have ready nearly a pint of cocoanut milk, into which has been stirred half a cupful of sugar and the whites of two eggs; add this to the chocolate, and cook for a few minutes but do not allow it to boil. Remove from the fire and serve in chocolate cups, adding after it is poured into the cups a tablespoonful of sweetened whipped cream that has been mixed with a little of the grated cocoanut.

* * *

Separate four eggs; beat first the whites, then add the yolks and beat lightly; dissolve one cup of sugar in a pint of cold water, add to it the juice of four lemons, and then a small quantity of cracked ice; stir the eggs carefully into this and use at once.

* * *

PEPPERMINT CUP

Soak half an ounce of pulverized gum arabic in half a cup of cold water for thirty minutes, then dissolve it over hot water; add one cupful of powdered sugar and cook until it will spin a thread; pour this upon the stiffly beaten whites of two eggs, and when well blended add very gradually a pint of boiling cream, a few drops of essence of peppermint and a tiny pinch of baking soda. Serve while it foams; sprinkle with a little powdered cinnamon.

* * *

GINGER CORDIAL

Stew slowly together a half pound of figs, half a teaspoonful of allspice, a pinch of ginger, a saltspoonful each of cinnamon, mace and ground cloves and sufficient cold water to cover the ingredients. When the figs are tender remove from the fire and press thro' a puree sieve, returning the syrup thus obtained to a clean saucepan, and adding three pints of ginger ale; allow this to heat gradually and then add a scant teaspoonful of cornstarch mixed with a little cold water. stirring constantly until it boils; flavor with a few drops of lemon juice and serve in small cordial cups, capped with a little chopped candied orange peel.

HOW TO RESTORE LEATHER.

To clean and restore the kind of leather that is used on furniture:

Dip a soft woolen cloth in boiling milk and wipe the leather with it, rubbing gently until all the dirt is removed. Then wipe the leather dry with a soft flannel. When it is clean go over the surface with a piece of flannel on which is spread a thin layer of prepared wax about as large as a pea. After waxing, go over the leather with a clean flannel, rubbing briskly but not too hard.

For the wax, cut two ounces of bees-wax into small bits and put them in a bowl, place the bowl in a pan of hot water on the back of the range.

When the wax is soft take it from the fire and beat into a quarter of a cupful of turpentine and half a tablespoonful of paraffin oil. It should now be used, but if it becomes cold before you are ready to use it, put it in a pan of hot water anl let it stand for a few minutes.

Ordinary black leather, such as is used for covering books, and handbags, if it has become faded or discolored, can be restored with a fine quality of shoe dressing.

Small Dorothy was visiting her grandparents in the country, and, seeing a quantity of feathers scattered over the hen yard, said:

"Grandpa, you ought to do something to keep your chickens from wearing out so."—Farmer's Wife.

We certainly met one self-made man on the street the other day. He could not walk straight—he made himself walk that way. His nose was red as flannel—he made it that way. Poor fellow. He ought to be ashamed of the job.

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A New Standard of roofing excellence has been established by Rex Flintkote. Our fathers swore by shingles. But shingles were hard to lay and failed to hold their own—they dried, cracked, warped. blew away, and burned at the touch of a spark. Then came tin—harder than shingles to lay, yet it led in roofing popularity until it proved that in spite of paints it *would* rust and become leaky. Its ease of laying alone makes

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perfect for farm buildings. An ordinary farm-hand can lay it perfectly. It weighs so little as to be no strain even upon lightly constructed support. It is unaffected heat or cold, proof against fire from falling sparks, leak proof in rain or snow, and is the only roofing that effectually resists all kinds of chemical action—acid, alkali or rot.

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and also a book showing all kinds of buildings which, under all kinds of weather conditions, are proving the superiority of Rex Flintkote. Under no circumstauces accept substitutes, mixtures containing tar and paper that cost about half as much to make, yet sell almost at the Rex Flintkote price. The dealer who is looking to your advantage, if he cherishes your friendship and trade in the future, will prefer to sell you the genuine even though his profits are less and it costs you just a wee trifle more per square foot.

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Santa Fe

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Following are a few:

Chicago	$33.00	Kansas City & Leavenworth	$25.00
St. Louis	30.00	St. Joseph & Atchison	25.00
Galveston	26.45	Council Bluffs & Omaha	25.00
Dallas, Houston and Fort Worth			25.00
Nearly all points in Kansas, Oklahoma and Indian Territory			25.00

Colonist rates are also in effect from all points east of Chicago and south of the Ohio river.

Santa Fe Agents in California will take deposits of money to cover price of tickets, which will be promptly furnished to passengers at any point from which these rates are in effect.

California illustrated literature mailed free to any address or may be had from Santa Fe representatives.

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The Produce Markets

Los Angeles Markets.

Los Angeles, March 8, 1906.

Butter has taken the expected tumble, Board of Trade and Valley Creamery being now quoted at 55c per 2-lb. roll, a decline of 5c since last week. Receipts are heavy and a further decline is quite on the cards.

Eggs are up a cent, but it is doubtful if the advance will be maintained, as the supply is large with no prospect of lessening.

Celery and cauliflower are practically off the market, while the supply of green peas and beans is constantly increasing.

Butter.

B. of T. Creamery, per roll	55
Valley Creamery, fancy	55
Valley Storage	52½

Cheese.

Cal. 3-lb. hand	17½
Cal. Young America	16½
California Anchor	15½
Northern	16@17
Domestic Swiss	19@20
Imported do	26½@27

Eggs.

Eggs, Fresh Ranch	19

Poultry.

Fryers, 2 1-2 lbs	18@19
Broilers, under 2 lbs., per lb	19@21
Young Roosters, per lb	16@17
Hens, per lb	14
Ducks, per lb	14@15
Geese	14@15
Turkeys	19

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock:

Hogs, 200 lbs	6
Prime Steers	4½
Cows	3¼
Calves, per lb	5
Sheep, ewes, per head	4.50
Wethers	5.00

Potatoes.

Northern, per sack	1.65@1.75
Locals, per cwt	1.10@1.25
Sweets, white, per cwt	2.40@2.50
Sweets, yellow, cwt.	2.00

Vegetables.

Onions, Australian Brown, cwt.	1.50@1.75
Onions, yellow, cwt	1.75
Garlic	7@10
Cabbage, per sack	35@50
Cauliflower, per doz	40@60
Asparagus	10@12½
Lettuce, per doz	15@25
Bell Peppers	15
Chili, Green	20
Cucumbers, per doz.	60@2.50
Radishes, per doz	20
Lima Beans	10@15
String Beans	15@20
Beets	40
Green Onions, doz. bunches	20@25
Carrots, doz. bunches	40
Turnips, doz. bunches	30@40
Celery, per doz.	45@50
Peas, per lb.	4@4½
Egg Plant	8@10
Tomatoes, local	2.50@4.00
Parsley, per. doz. bunches	60
Hubbard Squash, per lb	1½

Citrus Fruits.

Lemons, standard	90@1.00
Lemons, choice	1.00@1.25
Lemons, fancy	1.75@1.85
Grapefruit	1.75@3.00
Navels, extra fancy	2.25@2.50
Navels, choice	1.00@1.25

Fresh Fruits.

Apples, Bellefleur	1.75@1.85
Fall Pippins	2.25@2.50
Red Pearmain	1.00@1.25
Strawberries, per box	25
Guavas, per basket	3½@4
Pears, Winter Nellis, per lb	4½@5
Casaba Melons, large crates	2.25@2.50

Dried Fruit.

Apples, evaporated, ex ch, 9; ch, 8½.

Apricots, ex ch, 11; fy, 8½; ch, 7½.

Peaches, fy, 8½@10½; ch, 7½@8.

Santa Clara Prunes, 30-40, 8c, 40-50, 7; 50-60, 6c; 60-70, 5½.

Loose Muscatel Raisins, 2-crown 4½; 3-crown, 5; 4-crown, 6.

Beans, Dried.

Limas	5.00@5.50
Pinks, fancy	2.50@2.65
Lady Washington	3.00@3.10
Small White	3.50@3.75
Black Eyes	5.50@6.00

Nuts.

Walnuts, No. 1, soft shell	14
Do, No. 2	8@10
Do. No. 1, hard shells	12
Do. No. 2, hard shells	10
Almonds, paper shells,	16@17
Almonds, soft shell	14
Peanuts, California	6@7½

Honey.

Honey, comb frames	14@15
White, strained, per lb	6½@7
Light Amber	6
Amber	5
Beeswax	27

Hay.

Barley	12.00@14.50
Alfalfa, local	13.00@13.50
Alfalfa, Northern	11.00@12.50
Wheat	13.50@14.50
Tame Oat	11.00@18.50

Grain.

Selling prices of mill stuffs f. o. b. cars L. A., in quantity, are:

Rolled Barley	1.40
Bran	1.25
Feed Corn Meal	1.45
Shorts	1.45
Wheat, per cwt	1.60
Cracked Corn	1.40
Oil Cake Meal	2.25
Cocoanut Meal	1.55

San Francisco Markets.

San Francisco, March 7, 1906.

Butter.

Butter prices remain the same as for a week past.

Fresh California extras	26
Fresh California, firsts	25
Fresh California, seconds	24
Eastern extras	20

Cheese.

California, new	14
California firsts	13
California seconds	12
Eastern Cheddars	16
Storage, California	14
Storage, Eastern	15

Eggs.

Eggs attracted but little interest, selected selling in a moderate way at a slight advance.

Eggs, fresh ranch	18
Firsts	17
Storage, Eastern	14

Poultry.

Old Roosters, per doz	4.50@5.50
Young Roosters, per doz	6.00@7.50
Hens, per doz.	5.00@7.50
Ducks, per doz.	5.00@7.00
Turkeys, per lb.	14@17
Geese, per pair	1.75@2.25

Live Stock.

Hogs continue in short supply and under a spirited trade the upward trend of the market continues unchecked, prices again showing an advance and rough heavy stock ruling firm in sympathy with the strong feeling in hard grain-fed hogs. Values for all kinds of cattle are also higher and the demand is of a snappy sort, wth A1 offerings being keenly competed for. Other live stock hold strong at previous prices.

Hogs, per lb., 80 to 130 lbs.	7
Hogs, per lb., to 250 lbs	7¼
Hogs. pr lb., 250 to 350 lbs	6¾
Hogs, per lb., rough heavy	5
Prime Steers, lb	8
Cows, per lb.	6½
Calves, lb.	5@5½
Sheep, ewes, per lb	4½@5
Lambs, per lb	5@7
Wethers, per lb.	5@5½

Potatoes.

River Burbanks	50@85
Oregon Burbanks	75@1.20
Salinas Burbanks	1.00@1.50
Sweets, Merced	75@1.25

Vegetables.

Asparagus	10
Rhurbarb, per box	1.00@1.25
Onions, Oregon, per sack	1.00@1.25
Onions, Australian	3.50
Bell Peppers, green	25
Cucumbers, per doz	75@1.00
Tomatoes, per box	1.25@1.75
String Beans	15
Wax Beans	$..15
Summer Squash, per box	2.00
Green Peas, per lb	7@10

Citrus Fruits.

Navels, fancy	2.50@3.00
Seedlings	1.50@1.75
Lemons, standard	1.00@2.50
Grapefruit	1.25@2.75
Tangerines	1.50@1.75

Fresh Fruits.

Apples were in light supply and firm at the old standard of values.

Apples per box, extra	1.75@2.00
Apples, fancy	$1.25@1.50

Beans, Dried.

Limas	4.75
Pinks	1.90@2.00
Small Whites	3.15@3.25
Black Eyes	4.40@4.50
Bayos	3.40@3.50

Put It On Yourself

In addition to embodying every desirable feature of the best standard roofings

Pioneer Rubber Sanded Roofing

can be laid right without the services of a professional roofer It is pliable in every climate, won't bulge or crack or crease when you lay it and stays flat and firm after it is on. That weatherproof surface of Hard Flint Sand is another feature you should study thoroughly. It means many years of added wear—which means a big saving to you in roofing expenses. Another feature—it requires no painting or coating of any kind at any time. Another big saving.

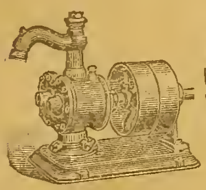
Send for samples and prices. Our roofing booklet "D" will tell you about all kinds of Roofing and Roofing Papers for every purpose. Send for it today.

Pioneer Roll Paper Co.
Los Angeles, Cal.

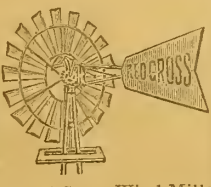
Red Kidney	3.50@3.75
Horse eBans	1.50@1.75
Hay.	
Barley, new	$8.00@11.00
Alfalfa	7.50@12.00
Wheat	11.60@16.00
Oats	7@12.50
Grain.	
Wheat	1.27@1.30
Barley	1.20
Corn, California. New Large	1.50@1.55
Oats	1.50@1.70
Rye	1.45@1.52
Rolled Barley, per ton	25.00@26.00
Bran, per ton,	19.50@20.50
Feed Corn Meal, per ton	20.50@30.50
Middlings .. ½	26@30
Cracked Corn, per ton	28.50
Oil Cake Meal, per ton	37.00
Cocoanut Cake, per ton	23.00

Hops.

The price of desirable grades is nominal at 8@12½ per lb., according to quality.



Gould's Rotary Pumps



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Woodin & Little

Pumps for all purposes, Pipe Fittings. Brass Goods, Wind Mills. Gasoline Engines, Tanks, Garden Tools. Send for Catalogue.

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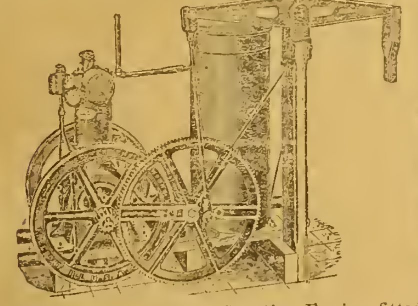
San Francisco, Cal.



Stover 2 horse power Gasoline Engine, fitted with electric sparks, high grade, easy to start; oh, how simple.

CANCER

IN WOMAN'S BREAST ANY LUMP IS CANCER

Mailed Free—How to Cure Yourself if Cancer is Yet Small—No Pain.

NO PAY UNTIL CURED—GUARANTEE— JUST SEND YOUR NAME

MRS. E. CROSTHWAITE,
954 Arlington Ave., Oakland, Cal.,
President Golden Gate Woman's Club,

Dear Dr. Chamley—I will state, your medicine cured a very large cancer in my breast 11 inches long, extending to my side and armpit in 14 days over 5 years ago. WRITE AND ASK HER.

Don't doubt, don't delay.

Mrs. A. L. Bailash, 332 Ohio Street, Vallejo, California, was cured at home of breast cancer; also her mother cured of cancer in both breasts. WRITE TO THEM. E. J. (Lucky) Baldwin, Arcadia, Cal., writes: Dr. Chamley cured a large cancer on my lip and two in my throat after X-Ray and other Doctors had failed. I will give $1000 if I fail to cure any cancer or tumor I treat before it poisons deep. You can't afford to make mistakes with Cancer. Life is surely worth sending your name. 130-page book sent free.

My discovery—a Pacific Island plant extract—has cured thousands of Cancers in from 10 to 20 days, after celebrated physicians and surgeons had declared them "as good as dead."

Address. **Dr. and Mrs. Dr. Chamley & Co.,**
, 25 Third Street, San Francisco, Cal.
KINDLY SEND THIS TO SOME ONE WITH CANCER

CITRUS MARKETS

No change of importance has come to the Eastern citrus market during the past week, all favorable conditions of the past several weeks remaining the same.

NEW YORK, March 6.—Twenty-eight cars were sold at auction today. The weather is favorable.

NAVELS (Ventilated.)	Averages.
Carmencita, xc, semi-tropic Ex.	$2.25
S. S. ch, Sunset Frt. Ex.	2.60
Lochinvar, ch, R-H Exchange	2.65
Lochinvar, ch., R-H Exchange	2.75
Eagle, xc, Riverside Ex	2.75
Red Mountain, xc, Riverside Ex.	2.75
Red Globe, xc, Riverside Ex.	2.85
Golden Rule, xc, Riverside Ex.	2.90
Our Pride, xf, Riverside Ex	2.95
Gold Buckle, xf, R-H Ex.	3.00
Gold Buckle, xf, R-H Ex.	3.05
Golden Eagle, st, C. C. Chapman	2.50
Old Mission, fy, C. C. Chapman	2.60
Standard	2.50
Flower, xc, F. P. Corson	2.50
Flower, fy, F. P. Corson	2.55
Slover Mountain, xc, F. P. Corson	2.65
Slover Mountain, fy, F. P. Corson	2.70
Sunshine Grove, fy, J. F. Bowen	2.55
Santa Fe, st, Moffatt Frt. Co.	2.60
Santa Fe, st, Moffatt Frt. Co.	'2.70
Santa Fe, st, Moffatt Frt. Co.	2.70
Fountain, ch, Moffatt Frt. Co.	2.80
Fountain, ch, Moffatt Frt. Co	2.80
Red Keystone, xc, King Frt. Co.	2.65
Blue Keystone, fy, King Frt. Co.	2.65
Riverside	2.65
Clover, xc, Redl. Gro. Assn.	2.65
Independent, xc, Highland	2.70
Independent, xf, Highland	3.05
Fountain, ch, Moffatt Frt. Co.	2.75
Cosmos, xc, West Highl. Cit. Assn	2.75
Poinsettia, fy, CCU, Highgrove	2.75
Bouquet, xf, CCU, Riverside	2.80
Triumph, xc, CCU, Highgrove	2.65
Seal, st, CCU, Highgrove	2.40
Lilacs, ch, CCU, San Dimas	2.40
Gold Coin, xc, CCU, San Dimas	2.65
Warrior, xc, Stewart Frt. Co.	2.75
Whittier, fy, W. F. Whittier	2.85
Whittier, xf, W. F. Whittier	3.00
Criterion, xc, Penn. Frt. Co.	2.85
Crafton, fy, Crafton Or. Gro.	2.85
NAVELS (Iced)	
Red C., xc, Covina Exchange	2.75
White C., st, Covina Exchange	2.75
THOMPSON IMPROVED NAVELS	
Orchard, or National O. Co.	3.55
Calif. Sunshine, fy, Or. Gro. Cash Assn" Redlands	3.05
Calif. Sunshine, fy, (halves)	1.80
LEMONS.	
Independent, fy, Highland	$3.50
Independent, fy, Highland	3.50
Independent, fy, Highland	3.85
Warrior, xc, Stewart Frt. Co.	3.60
Squirrel, fy, A. H. Rrt. Co.	3.60
Silver Lemon, fy, A. H. Frt. Co.	3.75
BLOODS (Half Boxes.)	
Blue Globe, xf, Riverside Ex.	$1.55
TANGERINES.	
Slover Mountain, fy, F. P. Corson	1.75
Flower, fy, F. P. Corson	1.95
Orchard, Or., National Or. Co.	2.55
Poinsettia, fy, CCU, Highgrove	1.60
GRAPE FRUIT.	
Flower, fy, F. P. Corson	$3.20
Gold Buckle, xf, R-H Exchange	3.00
Signet, xf, Or. Gro. Cash Assn (halves)	1.55

Among our general advertisers there are probably none of a more reliable standing than that of the Pacific Implement Co., 153-151 Kansas St., San Francisco, Cal., general Coast agents for the well known Osborne Farm Tools and Osborne Harvesting Machinery; Millburn Farm Wagons and Pontiac Buggies; South Bend Chilled Plows; Columbia Vehicles; Eagle Dump Wagons; Ohio Feed Cutters; Kentucky Drills; Orchard Cultivators; Evan's Corn and Bean Planters; "New Way" Hay Presses; Ney Hay Tools; Circular Rotary Harrows; Iron Age Garden Tools, etc. Farmers interested in any line of farm machinery should write this firm for circulars and price list. They carry only the very best of machinery and will very likely save you money on small as well as large orders.

The Iwan post hole and well auger, manufaceured by the Iwan Bros., Streator, Ill., is a very useful article and the manufacturers say it is the best auger in the world for boring into the earth. Write them for catalogue.

JUST OUR LUCK!

We lose our advertisers very frequently because we sell their goods too fast:

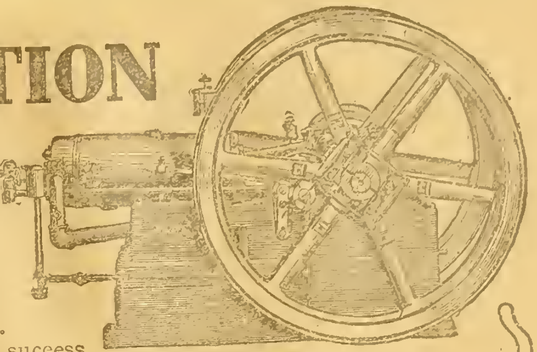
Hanford, Cal., Mar. 3, '06.
California Cultivator,

Gentlemen:—Enclosed find cash for advertising. Stop my ad., as I can fill no more orders. I will be back next season and will be better able to take care of my trade. Yours,

Joe McDonald.

Where is the poultry fancier who is making a specialty of Cornish Indian Games? The Cultivator has an inquiry from a subscriber at Rialto who wishes to purchase. They should advertise.

FOR **IRRIGATION** By **PUMPING**



For all those who wish to irrigate by pumping, the I. H. C. gasoline engine is the one best power.

The difference between success and failure in an irrigation pumping plant is often a question of fuel.

The I. H. C. engines use gasoline—a cheap and easily transported fuel.

They take the least fuel and convert it into the most power.

They are unequalled when put against a steady load as in pumping, and sustain their full rated power with persistency and regularity.

They can be belted to any centrifugal or direct pump for lifting water from wells, canals, streams, etc.

Anybody can run them without expert knowledge or previous experience.

They can also be used as a general [illegible] engine for sawing wood, [illegible] separating, feed grinding, etc. [illegible] are made in several styles and sizes—

Horizontal and Portable—4, 6, 8, 10, 12 & 15 Horse Power.
Vertical—2, 3 & 5 Horse Power.

Call on local agent and examine these engines or write nearest general agency for illustrated catalog.

WESTERN GENERAL AGENCIES: Denver, Col., Helena, Mont., Portland, Ore., Spokane, Wash., Salt Lake City, Utah, San Francisco, Cal.

INTERNATIONAL HARVESTER COMPANY OF AMERICA, CHICAGO, ILL.
(INCORPORATED.)

The New Pomona Pump

We must not attribute all of the success of the Pomona Pumps to the Pump Head or the part of the machinery above the ground, for there is another part just as essential, and this is the cylinder and valves. Our cylinders are made of the best seamless brass tubing made to our order in the East. The valves are made of the best phosphor bronze and are cast and finished complete in our shop.

These valves are of the most improved pattern, have cone-shaped clappers with ground metal seats. There is only one moving part in each valve and we have never had them clogged with sand. The plungers are furnished with three cup leathers, each made from the best oil tanned leather.

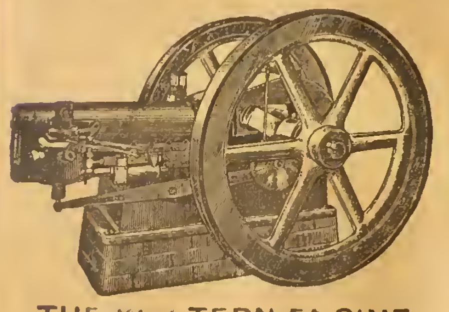
With the New Pomona pumphead using a quick return motion and lap in the plungers, these valves have sufficient time to seat before taking up the load of the water columu, consequently there is no hammer or jar. The Pomona Pumps are taking the lead for irrigation purposes and are rapidly displacing pumps of inferior design and workmanship.

Send for catalog and estimates for our new plants.

Pomona Mfg. Co.
POMONA, CAL.

THE WESTERN GAS ENGINE

"From Factory Direct to User"



THE WESTERN ENGINE
Maximum Power at Minimum Cost

Designed and built by Western experts for Western use with Western fuel. In construction the Western embodies many original yet practical ideas which place it in advance of any other make on the market today. The simplest, strongest and best engine for

Irrigation, Power and Electric Plants.
Any Size from 5 to 500 H. P

Burns cheapest fuel—gasoline, distillate or crude oil with a saving of 20 to 40 per cent over any other style. Send for Illustrated Catalogue fully describing every detail of construction: tells how and why the Western excels all others: it gives the facts the proof. Learn what Western engines are doing for others. Send your name today—ask for latest issue. A6.

WESTERN GAS ENGINE CO.
908-932 N. MAIN ST. LOS ANGELES, CAL.

BEST TREE WASH **GREENBANK** 98% Powdered Caustic Soda and Pure Potash

Copy of Analysis of competitive brand la[illegible]nd sold as "Powdered 98% Caustic Soda:" Sodium Hydrate, 75.60%; Sodium Oxid, 58.59%. [illegible] M. CURTIS & SON, Analytical Chemists.

T. W. JACKSON & CO., [illegible]ia Street, SAN FRANCISCO

FIFTY YEARS FROM NOW

Some One May Make a Better
SAND PUMP THAN THE

makes now, but Fifty Years is a long time to wait, and you might be able to earn a dollar or two by using a VULCAN while you are waiting on the other fellow.

Vulcan Iron and Tool Works, 917-919 North Main Street, Los Angeles, Cal.

Caustic Soda 60%, 70%, 74% 76%, 78% 99%. Powdered and Solid. Full information cheerfully given. All goods guaranteed.

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NATIONAL WOOD PIPE CO.

MADE FROM CALIFORNIA REDWOOD OR SELECTED PUGET SOUND YELLOW FIR **WOOD PIPE** WOODWARD PATENT MACHINE BANDED PIPE WH·E·E· PATENT CONTINUOUS STAVE PIPE BORED WOOD WATER PIPE

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The peer of all with 14 years' record for durability and efficiency.
Cheapest because best.

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Both Phones 679 242 to 248 So. Los Angeles St., Los Angeles, Cal.

NO, THIS IS NOT AN ARTESIAN WELL, BUT

AN IRRIGATION PUMPING SYSTEM
SUPPLIED BY
S. J SMITH MACHINERY CO.
POWER PLANTS, PUMPING MACHINERY AND WATER SUPPLY GOODS 212-214 S. Los Angeles St., Los Angeles, C l.

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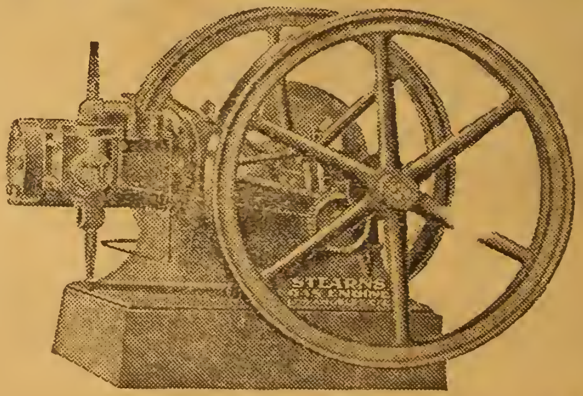
PACIFIC IMPLEMENT COMPANY
133 to 151 KANSAS ST., SAN FRANCISCO

STEARNS GASOLINE OR DISTILLATE ENGINE



Has many points superior to any other engine.

Hundreds in Use

Every One Satisfactory

Built for California cheap fuel.

For further information, write

STEARNS GAS ENGINE WORKS 1001-3-5 NORTH MAIN STREET LOS ANGELES, CALIFORNIA

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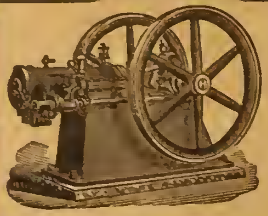
AMES PUMPS ARE STANDARD

A.T. Ames, Galt, Cal.



THE COLUMBUS

Gas, Gasoline and Distillate Engine

Embodying New and Important features in design and operation.

Send for Catalogue E. All information furnished. Address

Columbus Machine Company
121 So. Los Angeles St. Los Angeles Cal.

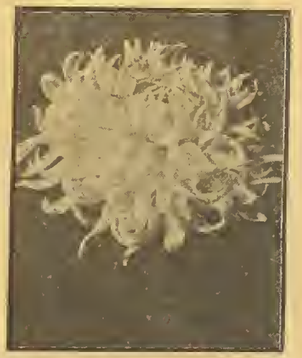
CALIFORNIA
CULTIVATOR
DEVOTED TO
AGRICULTURE
IN ALL ITS BRANCHES

LOS ANGELES MARCH 16, 1906 SAN FRANCISCO

1906 Types of Chrysanthemums

Wht. Bonnaffon

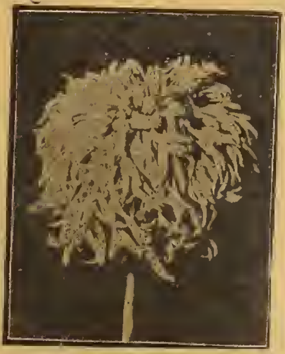
CALIFORNIA GOLD


Silver Wedding

Bertha Walsh

Frank Hardy

Wm. Duckham


Mrs. E. Thirkell

Guy Hamilton

Timothy Eaton

WHO STOLE THE BUTTER?

A farmer owned a herd of milch cows that yielded him an average of 400 pounds, about 200 quarts, of milk per day. It was average milk, being 4 per cent butter fat. In other words the 400 pounds of milk his cows gave him daily contained 16 pounds of butter fat. This farmer had his milk tested, and knew it contained that amount of butter fat. He churned every three days and knew the cream from three days' milk should yield 48 pounds of unsalted butter. But it didn't. Instead of getting 48 pounds, he rarely got more than 25 or 26.

Who was getting the Cream?

His wife thought somebody might be stealing it, so he put a lock on the milk house door. That didn't help matters any.

He was puzzled. He had a first-class milk house, used the best system of deep setting, and couldn't see where that cream went. He let his milk stand until almost sour before he skimmed it, thinking it might cream better. But that didn't mend matters any—simply spoiled the skimmed milk for calf feed. Up to that time he had thought he had a perfect system of skimming. But he knew that 48 pounds of butter fat was there, because he had had his milk tested; but he could not make as much butter as he should.

He grew suspicious of his cans. It seemed to him that something was wrong with his cans. He asked his hardware dealer about it. This was the answer he got. "Look down your calves' throats." He asked the hardware man what he meant. The hardware man replied, "You have been robbing yourself—been feeding about half your butter fat in your skimmed milk. Your cans are good enough, as cans go— but cans don't do the business. They depend altogether on the force of gravity to do the skimming, and gravity is not strong enough. Half of the butter fat remains tangled up in the skimmed milk, and it takes a force a whole lot stronger than gravity to get it out."

"What will do it?" the farmer asked.

"Centrifugal force, as applied in the Sharples Tubular Cream Separator," was the reply.

This hardware dealer was an agent for the Sharples Tubular Cream Separator, and loaned this farmer a Tubular for a free trial. The farmer took the Tubular home, used it three days, churned 47 3-4 pounds of unsalted butter from the cream it extracted out of three days' milk, and sent a check to the hardware dealer in payment for the machine. He had been robbing himself, and did not know it. He had been making six-cent veal out of butter fat the Tubular would have enabled him to get 25 to 35 cents a pound for, when he could have made just as good veal out of oil meal costing but two cents a pound. The kindness of the Tubular agent in lending him a Tubular for a free trial enabled him to find the loss and stop it —making a gain for him of about 8 pounds of butter per day.

All Tubular agents are just as accommodating. Any one of them will lend you a Tubular for a free trial. If you do not know of any Tubular agent near you, we suggest that you write to The Sharples Separator Co., of West Chester, Pa. If you will ask for catalog No 260 they will not only send you the catalog, but refer you to their nearest local agent. The Tubular Cream Separator is a machine we can and are glad to, heartily recommend.

Flannery—What's the matter wid ye, Mike?

Finnigan—'Tis near kilt I was be fallin' down an open coal hole.

"Well, well, 'tis too bad they can't invint a coal hole thot'll stay shut whin it's open."—Philadelphia Ledger.

In California they do things on a large scale. You see flocks of poultry roaming on hundreds of hillsides as well as in the valleys, and on these hills are large poultry farms that are about a mile square, and the poultry houses are in colonies scattered throughout the fields.

The above is a bird's eye view of Mr. M. Sartori's Poultry Farm near Tomales. For the last two years the laying hens have been fed daily on Coulson's Mash Egg Food and Coulson's Chick Feed, 350 bags at a time. (About 5 wagon loads.)

Chicks, 2 Cents Each

Took from the incubator 831 chicks —fed them entirely on Coulson's Special Dry Chick Feed until 5 weeks of age—they ate 400 pounds of Chick Feed—nothing else—cost less than 2 cents per chick to feed them entirely on Coulson's Special Dry Chick Feed up to 5 weeks of age.

O. P. H., Petaluma, Cal.

Ask Your Dealer For It.

Feed It One Year

M. SARTORI

After we left the seaside we drove along at a lively gait through the valleys and canyons toward Petaluma and we very much enjoyed the scenery of beautiful rugged nature, for this country is wild and mountainous. and wherever we could see in the distance around us, we could see the foothills, or what may be called young mountains. As we were driving along we noticed that on some hills there were hundreds of cattle ranging, and on other hills were large flocks of sheep; but on the majority of the hills around us, and in the distance we could see groups of little white-washed poultry houses scattered a few hundred feet apart. At each group of these little buildings there was a colony of several hundred laying hens of the White Leghorn variety, and as we drove past them, we could hear them singing about Egg Food for hens; for they all wanted it, and if some of them did not get it, it was because their owners were too selfish and too blind to all interests of their fowls to give them what they so much desired. Coulson's Improved Egg Food, that makes hens produce $4.00 worth of eggs in a year.

The above illustration represents a photographic view of M. Sartori's 700-acre Dairy and Poultry Farm, fourteen miles from Petaluma. For more than two years Mr. Sartori has been feeding his laying hens Coulson's Mash Egg Food, once a day, and any one driving along the road will be surprised to hear the noise this great flock of hens do make. All day long they are cackling and singing and laying eggs, and they are probably talking to each other about how good Coulson's Improved Mash Egg Food tasted to them, and how many eggs they were going to lay, and who could lay the biggest eggs and the most eggs that year. It's no wonder that Mr. Sartori can come to town twice a week with a whole wagon-load of eggs.

The other illustration was a view taken four miles from Petaluma, on the road to the Sartori ranch, and shows the way Mr. Sartori buys Coulson's Egg Food for the pullets and hens and Coulson's Chick Feed for the little chicks.

4 Cents a Month

Reader:—You can feed a hen Coulson's Improved Egg Food once every day for 4c a month. Can't afford that? Why, two eggs a month will pay for the feed, and when you get 15 to 20 eggs from a hen in a month, think of the money you will make by feeding Coulson's Feed.

We Sell
COULSON'S SPECIAL DRY CHICK FEED
THE BEST FEED FOR LITTLE CHICKS AND TURKEYS
COULSON POULTRY & STOCK FOOD CO

The above picture was taken on O. P. Hall's poultry farm, showing one of the broods of young chicks then three weeks old, raised on Coulson's Special Dry Chick Feed, at a cost of 1c per chick for the first 25 days.

Mr. Hall will raise a few thousand pullets this year, to stock up his 100-acre poultry ranch. Another lot of 1500 chicks has just been hatched and the five incubators will be set several times more this season. Mr. Hall buys Coulson's Special Chick Feed in ton lots.

As seen from Middle Two Rock Road, four miles from Petaluma. By looking closely, you will notice the many small poultry houses. Each one is occupied by hundreds of chickens. The teams that you see are loads of Coulson's Egg Food and some Coulson's Special Dry Chick Feed, going to the different Poultry Farms, some of which buy a carload of Coulson's Foods at a time; for instance, M. Sartori, Geo. W. Gaston, A. D. Rezendes, W. W. Freeman and others, who have 5000 laying hens or more.

COULSON POULTRY AND STOCK FOOD CO., PETALUMA, CAL.

CALIFORNIA CULTIVATOR

Vol. XXVI—No. 11 LOS ANGELES, CAL., FRIDAY, MARCH 16, 1906 Subscription $1 a Year

Some Practical Aspects of Seed Testing

By Miss Alice F. Crane

Nearly forty years ago Dr. Frederick Nobbe, of Tharandt, Germany, commenced investigations of the condition of seed trade in that country. His disclosures in regard to the poor quality and serious adulterations of commercial seeds resulted in awakening much popular interest in the subject, and finally, in 1869 organized Seed Control was established in Germany, with a station for testing commercial seeds. Now there are many of these stations in Europe Brazil, Japan, Java, etc.

During the past ten or twelve years much valuable work has been done on this subject by the U. S. Agricultural Department. Considerable has also been done by a number of Agricultural Colleges throughout this country.

We will not now discuss the necessity of Seed Control in this country. Such control will be welcomed by honest dealers. We look for the time to come when only seeds that reach a required per cent of germination and of purity will be allowed on the market.

More particularly, I wish to speak about weeds and weed seeds. But a little about germination tests first. Different seeds require different treatment, or different conditions, and a practical Seed Tester is supposed to know what are the conditions most favorable to the germination of the seed in question.

Testing Sugar Beet seed is a very interesting and a complicated piece of work. Some beet balls may produce from three to six sprouts. Each sprout must be carefully pricked out, and a record should be kept of how many sprouts to a ball. High percentage seed will keep one busy when germination is at its height. for each sprout should be removed before it separates from the seed. Sometimes this happens in the middle of the night. A report of Sugar Beet tested after the rules of Germany and France should state:

The average number of sprouts in 100 beet balls;

The average number of balls in one kilogram of seeds;
The average number of sprouts in one kilogram of seeds;
The percentage of moisture;
The percentage of purity;
The percentage of beet balls that did not germinate.

I have recently examined many samples of the last two crops of wheat grown in different sections of our State. A large number contained considerable barley and oats, either cultivated or wild oats. Also 70 per cent of the samples of wheat contained seeds of so-called poison rye grass also called poison darnel, and these frequently in large numbers. In one sample one-half of the seed, by count, were of this weed. This grass, poison darnel, is our California chess or cheat. A Brome grass is the chess or cheat of the eastern and northern states. There has been a popular fallacy that wheat turns to cheat—even some seedsmen believe it now. These grasses spring only from their own seeds. When chess seeds of strong vitality are present with small shriveled wheat, is it any wonder that the wheat field is over-run with this pest, which is a very hardy plant?

A few years ago in a district south of here there was considerable trouble experienced in raising oats. A sample of the seed used was sent to Prof. Hilgard with a letter explaining that repeatedly in that vicinity oats had been planted from which a crop of barley was raised. And an appeal was made for an explanation of this freak or mystery of nature. Upon testing this sample I found that it contained 80 per cent of small oat seeds, 85 per cent of which would germinate under most favorable conditions, but the seedlings were not strong; 18 per cent of the sample consisted of good plump barley seeds, 98 per cent of which would germinate, showing a vigorous growth; 2 per cent of the sample was of poison darnel, chess of cheat.

Please do not believe that wheat can turn to cheat or oats can turn to barley.

It has been said that in a broad sense any troublesome plant may be called a weed. Bad or noxious weeds are any kind of bindweeds, as morning-glory, which is more feared by farmers than any other weed, whether or not it is the worst one we have; parasitic vines, as dodder or love-vine, which causes so much havoc in clover and alfalfa fields and in flax fields in the old world, which twines its yellow leafless stems around the plant from which it takes its nourishment, surely weakening the plant, if not taking its life—the utmost precaution should be taken not to introduce it.

Plants with creeping root stocks, as Johnson grass, Bermuda grass and Poverty weed are very objectionable, for once in the ground it is almost, if not quite, impossible to eradicate them.

Squirrel tail and fox tail grasses may prove very troublesome.

Also any spiny or prickly plant, as the common spike weed of the lower San Joaquin Valley, and prickly lettuce, and any plant which bears many seeds and is of no use for forage.

It is not unusual for me to find from 100 to 500 weed seeds in about one teacupful or one-third of a pound of Alfalfa seed. These samples frequently contain from 10 to 20 different species of weed seeds—often some may be screened out by means of a properly selected sieve. One of the species of dodder seed frequently found in alfalfa seed can not be cleaned out. Alfalfa seed which contains any dodder seed should never be planted. Utah alfalfa seed may be excellent as regards germination, but we want to know which of Utah's weed seeds we are importing.

From the kind of weed seeds present I can frequently tell whether the seed before me is Utah or California grown. In about one-third of a pound of alfalfa seed I found the other day just one seed of so-called Russian thistle, also called Russian Cactus, but better called Russian Tumbleweed. Introduced with flax into the middle west some twenty-five years ago, it proved a fearful pest. It is said that one plant may bear from 20,000 to 30,000 seeds which are scattered as the plant is blown, rolling and tumbling over the country, or the seeds owing to a winglike attachment may themselves be carried by the wind.

Is there not economy in having seed tested before planting? Frequently, whether there were many or few weed seeds present, I have been able to tell the farmer that it was possible to clean out all of the bad weed seeds.

On rendering my report I always explain the character of the objectionable weeds represented by the foreign seeds in the sample.

One man said recently that he spent $70.00 this last summer in attempting to destroy morning-glory.

I would like to know what some of this audience could tell of destruction of crops, land rendered useless, and money lost from the presence of weeds.

Scene above Ukiah on the Line of the California Northwestern Railway.

Deciduous Fruit Culture

BY J. W. MILLS, POMONA, CAL.

PEDIGREED TREES

The time was when 90 per cent of the growers would plant orange trees and be satisfied with no other guarantee than that they were Washington navels or Valencias. That time should be past for every prospective planter. A striking example has just been presented to us by a non-resident orange grower who has a grove at Upland. The owner has written to the Experiment station to have the grove examined and ascertain if possible the reason why the trees have failed to bear satisfactory crops. The grove is in charge of a thoroughly competent man and the best care has been given it. The trees are thrifty, bloom full, but set little fruit. The general shape of the trees suggested at once that they were not a good type of Washington Navel, but had the appearance of Australian navels, though the fruit was distinctly of the Washington type. The history of the trees was not known, they having been shipped in from another district. This orchard has been cared for as well as could be, fertilized, irrigated, cultivated and fumigated, but the returns have been discouraging. A few trees seattered here and there are of the true Washington Navel type and are loaded with fruit. A few trees have been budded over to a good strain and are bearing large crops of fine fruit. We never have seen a more striking example of the folly of buying and planting any kind of a tree that was offered. Some time ago, there appeared an advertisement in the Cultivator for Pedigreed Valencia nursery trees. This man was an up-to-date citrus grower and well known in Southern California as a careful man in business affairs. It is safe to say that had all the citrus growers of California used this precaution the grade of California oranges would be several per cent higher than it now is.

Several articles on the importance of pedigreed nursery stock have appeared in this paper. There is no branch in horticulture which has an exception to this important principle. It applies to all living things and it does not show a close attention to details when a person will accept any kind of stock or will object to paying more for stock which is known to be derived from tested parentage. The idea of caring for an orchard for years and have it produce ten or twenty per cent less than it would had a proper selection of trees been made, is no worse than a merchant locating in a poor business section because the rents are cheaper. The merchant can change his location in a day, but the grower has his business rooted deeply in the soil.

There should be a law compelling every nurseryman to keep a history of the source of his stock with a penalty attached should he sell without it.

WALNUT AND GRAPE PROBLEMS

Editor Cultivator—Can you tell me if it is necessary to cut the tap roots of young walnut trees in order for them to bear? Can you plant the nut and cut the root still leaving the tree in the place where it grew? Also can you tell me any special kind of table grape that will bear well on this coast? Any information will be greatly appreciated. C. E. K., San Luis Obispo.

It is not necessary to cut the tap roots of walnut trees to make them bear. Plant budded trees or graft over trees that do not bear and you will have the problem solved. We would judge from your question that your trees are seedlings.

There are so many varieties of table grapes that bear well on the coast that we hardly know which to recommend to you. A good collection for the family vineyard would be Cinsaut, Blue Portuguese, Napoleon, Verdal, Bowood Muscat, Golden Queen and Clivette de Cadinet.

TRANSPLANTING AND SPRAYING PEACH TREES.

Editor Cultivator—Would you kindly inform me in your next issue as to how low you would cut down two-year-old peach trees just transplanted and it is advisable to spray peach trees now when buds are all just beginning to break open. What solution would you use? salt, lime and sulphur or salt, lime and bluestone? R. B. Reedley.

We would cut two-year-old peach trees just transplanted, back so there would be about four buds of last year's growth left.

It will not hurt your trees to spray with the lime, salt and sulphur. wash even when a few of the fruit buds are beginning to open. It will, however, destroy the blooms when they are open. The lime, salt and sulphur wash with one pound of bluestone to every ten gallons of water will be effectual for bugs, worms and fungus.

PEACHES IN SOUTHERN CALIFORNIA

Recent arrivals are coming at us with the question of planting peaches in Southern California for the markets and canneries. This subject has been thrashed out several times, but it is dollars in the pockets of the tenderfeet and they are our good friends, to know the weak spots in our fair land. Southern California has a weak spot in her peach belt. With the exception of some of the southern varieties and the Salway and perhaps one or two other northern varieties, peaches are uncertain and generally unprofitable in the south. The trouble is due to the freaks in our climate. We usually have a warm spell of weather in February that starts the sap to running and later on we have some cold weather that gets them out of the notion of growing. This element in our climate does not suit our peaches and they are so affected by it that they often fail to even leaf out in the tops. It is quite common for them to drag along in their blooming until July. The result is that most of the bloom drops before it sets fruit and in some years most of the blossom buds fail to open. This is why we cannot show big returns from our peach orchards.

Lewkins Honey, Belle of Georgia, Angle, Triana and some of the other southern varieties always have a crop with us. Henrietta is a yellow cling that gets through all right and Salway is a yellow freestone that does the same.

PLOWING ..UNDER ..GREEN CROPS

It is not safe to delay plowing under green crops much longer. The fiber of the plants will rapidly toughen from now on and the more fiber the plant contains, the more moisture and the longer time will it take to decompose it. It should all be disintegrated before the summer weather comes on or a great deal of the benefit will be lost. A heavy growth that lies near the surface causes the soil to dry out and besides it is always interferring with the cultivation. A large part of the benefit that would be derived from it during the coming year will be laid over if not entirely lost, for that which the cultivator drags out is usually bunched and burned or carried off the land to get rid of it. A good method is to disc the peas before plowing. This cuts them in small pieces which prevents their bunching at plowing time. The disc alone is supposed to do both jobs at once, but where the peas are very heavy they will even bunch up with this machine.

GRAFTING PEACH TREES

Editor Cultivator—As I have never seen how trees are grafted, will you please write in your paper how I can graft three or four-year-old nectarine trees to Muir peaches and when? Del Rey.

This question is fully answered in the March 2nd number of the Cultivator on Page 196.

PEACHES, PLUMS AND PEARS

Editor Cultivator—Will you kindly tell me through your paper the names of some of the best varieties of peaches? Especially tell me how the Carmen, Guinn and Hawk are, also how the Barry pear and Abundance Plum rank among their kind. Subscriber, Ventura.

Carmen is not much of a peach, and we are not acquainted with the other two which you mention. Barry is a good variety of pear. Abundance is a fairly good plum, but not so good as some other varieties.

A few of the best varieties of peaches are Large Early York, Belle of Georgia, Lewkins Honey and Cooleges Favorite. These are freestones for table use, and are some of the best in a collection of a hundred or more varieties.

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For profit. We are prepared to purchase the fruit and, in fact, all kinds of small fruits, even if too ripe for other uses. If you have

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it will be to your best interests not to sell to peddlers, but to dispose of such fruit to the

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Practical Farm Science

BY PROF. A. J. COOK

MILLET OR SWEET CLOVER

There is no single family of plants that play so large a part in honey production as the clover or legume family Leguminosae, so named, because the fruit is a legume or pod, as best typified in the peas and beans. Here we have the locust, the mesquite, so famous for honey in most arid parts of our own State and in Arizona; beans which often give a beautiful yield of nectar in the fields of Ventura county; and most important of all the several clovers, the white clover that incomparable honey plant of all the East producing as it does, honey as delicious as any known. And so wide in its distribution, and so excellent as a lawn plant, the red clover of little value for black bees, because of its long flower tubes, pouring out its nectar beyond the reach of their short tongues, though giving to Italian bees often no inconsiderable portion of their large product; the alfalfa, which in the San Joaquin valley, Nevada, Utah and Colorado, is oftimes the almost total dependence for the great honey harvests of those regions; and last of all our subject for today: melilotus, or sweet clover.

The two varieties of sweet clover, yellow and the far more common, white, are both superb honey plants, which were they as extensively grown would be close rivals of the white clover in value and importance to the American bee keepers. The honey that we get from sweet clover, as we would judge from the exquisite perfume which is exhaled by the plants when in blossom, is fully equal in appearance, flavor and quantity produced, to the justly prized white clover honey or to that from alfalfa.

There is, however, one serious drawback to sweet clover. It does not take high rank as a useful forage plant either for hay or pasture. I grew this among my experimental plants for honey for a long series of years at the Michigan Agricultural College, and while the beauty of the plants pleased me greatly by their vigor and beautiful green, yet I could never coax my cow or horse to show any preference or even liking for them. They were so uniformly excellent for honey that I tried over and over to get my horse and cow to show a taste for them, but always in vain. I am aware that many people in widely separate sections of our country praise them for both hay and pasture; yet from my own experience and observation, as also from the fact that they have never gained any prominence in this respect any where throughout the country so far as I am aware, make me very fearful that bee keepers who hope that these sweet clovers will never enter prominently into the field of forage plants reckon without their host. I am further confirmed in this opinion from the fact that both in California and Michigan I have seen them n pasture fields, left undisturbed by horses and cattle alike, while the grasses and other clovers were closely cropped. I wish I were wrong in this, for I would like to see sweet clover as useful and valuable as a feed, as it is for honey, yet I feel very confident that our farmers will never grow this plant for feed. When they can get alfalfa red clover, or alsike. This latter is by the way, of rare excellence as a honey plant, as well as for hay and pasture. There is, however, one use for sweet clover that may well be considered. I refer to road side planting, and for planting in waste places. There is much yellow sweet clover along the irrigating ditches in Caifornia, and it is extensively grown along the highways in sections of Illinois and other states. Every bee keeper should see to it that abundant honey plants fill all waste ground about his bee yard. Aong the railroads is often a goodly area that can be thus utilized. Bee keepers are wise who keep seed of such plants as the mints, cat-nip, motherwort, etc, even in their pockets, to be scattered when and where they will grow, to add to his profits and in such cases the sweet clovers may well claim attention. Let us remember, however, that it is well demonstrated that it will never pay to cultivate on good land plants exclusively for honey.

LIMING THE SOIL

An article by an eminent European authority reviews quite fully recent investigations, including those of the author and his associates, on the use of lime as a fertilizer, concluding that the results confirm the author's well-known views regarding the necessity of maintaining a definte relation between lime and magnesia in the soil in order to insure the highest productiveness. It is also necessary that neither lime nor magnesia should fall below a certain limit. For this reason it is urged that in soil analysis determinations should always be made of the megnesia as well as of the lime.

DOUBLE BAGGED COW

Will a cow with two bags, one beneath her body and the other on top, give twice as much milk as an ordinary cow with only a single outfit? This is the question before Ben Robbins of No. 247 West Thirtieth street. He has one of these fully equipped new-style cows.

The animal, now 8 months old, is a fine Jersey, perfectly formed and healthy, except that it carries a second bag with four udders on its back. This bag is a duplication of the one in the regulation place under the body. The bag on the back forms the end of a fleshy growth about a foot long, of oval cross-section, and about six inches in diameter, which grows out just forward of the root of the tail.

The calf was deformed in this peculiar way when born, and yet it has been very healthy, having grown and developed rapidly. Men who have had years of experience with cattle say this is the queerest and most wonderful freak they have seen, and they are watching the development of the animal with great interest.—Los Angeles Times.

PIONEERING.

There is an unexplainable essence and substance to pioneer efforts—a something in youth that is richest and dearest of all. In later times our efforts may be more finished, there may be even more to boast of, but a quality is gone, a something is lacking that we know and realize but cannot explain.

"There are gains for all our losses,
  There is a balm for all our pain
Yet when youth the dream departs
It takes something from our hearts,
  And it never comes again."

The difficulties which beset men in the beginning of things, tends mightily to the building of character. Strong men are the natural product of pioneer efforts. These struggles bring out qualities and round out character as nothing else can.

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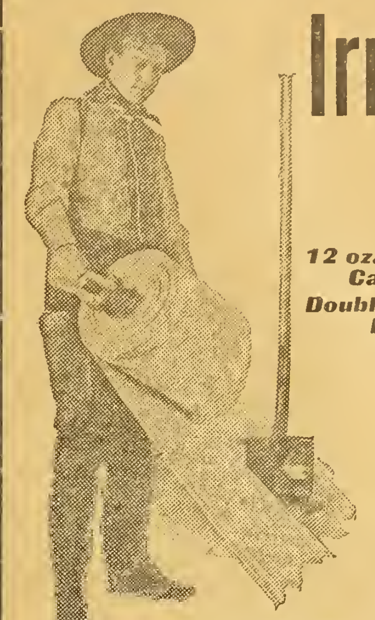

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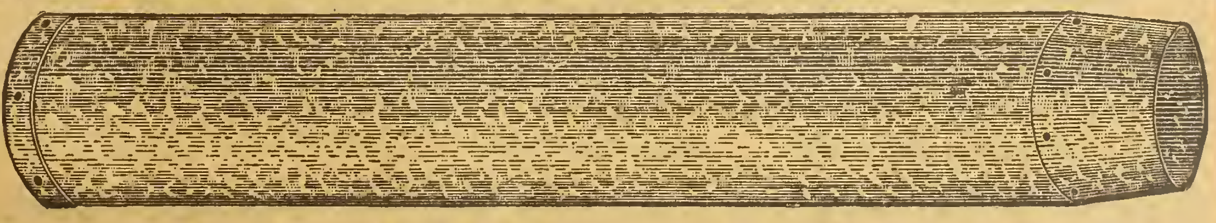

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And all of our citrus fruit trees are grown in our nursery at Exeter, which has a deep, rich, black loam and is particularly suited to citrus trees. All of the standard varieties will be found in our stock.

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THE NURSERYMAN'S SIDE

Editor Cultivator—I was very much interested in what Mr. Geo. C. Roeding had to say last fall in regard to nursery stock and the general inspection laws of the State. It would seem that a further discussion, open and honest, would be very beneficial The general impresson seems to be that the nurseryman's business must, of necessity, be illegitimate and he an outlaw and a pirate, and therefore lawful prey to be despoiled of his property without regard to equity or scientific facts; that is, without regard to the "square deal."

I was in the Baldwin Ranch country near El Monte, last week and found lots of walnut planting under way. One man told me that after his trees were planted an inspector came around. The inspector was going to have them taken up and destroyed, but the man objected. He told the inspector that there were thousands of walnut trees all around him that had been planted from one to probably twenty or thirty years that were infected with the bilght, and, unless these were dug up and destroyed it was useless for him to dig up and destroy; the only difference being that his had been planted a week or two while the others had been planted longer. The inspector told him that it was the intention in Los Angeles county to dig up and destroy every tree found to be infected in the county. However, the inspector took the matter under advisement. The planter told me that he had some not yet planted, and that the inspector would probably condemn part of these—not because they were worse than those planted, nor the thousands that had been planted for years,—but because they were not planted. The planter seemed to think that the destruction of these trees would be alright if the nurseryman had to stand the loss, but that it was all wrong if he had to stand it. The trees were a fine lot and, I found, had been furnished by a neighbor of mine.

Some years ago members of a firm in Los Angeles county told me that it was the intention to dig up and destroy all apple trees in the county found to be infected with woolly aphis. I replied tht all bearing trees in the county would probably have to come out. They scoffed at the statement. About two years later Mr. Maskew reported that he had found about 75 per cent of the apple trees so infested in one of the supervisorial districts.

The probabilities are that every walnut tree in Los Angeles county is infected with the walnut blight. Assuming that the trees infected were dug up and burned and new trees, entirely free from the disease were planted, before they came in bearing every one of them would be in fected and ready to be dug up again, and so on till the end of time. The industry would thus be annihilated by the very system and men who are supposed to nurture and protect it.

The conditions are about the same as regards the walnut blight. all over the State as in Los Angeles county. For four years in succession I have visited every important walnut section and nearly all important groves, in Southern California and know from personal observation whereof I speak. Now is it in accordance with reason, equity, or scientific facts, or the "square deal", to destroy trees infected with the blight, which belong to a nurseryman, while trees equally infected but not owned by nurserymen are not destroyed? Shall we annihilate the industry in order to rid ourselves of the blight? I say "No" to both questions. Let us deal honestly and rightly with the question.
A. A. Mills, Anaheim.

RUSH GROWING

The agricultural department of the University of California, experimenting in co-operation with the Oakland Board of Trade on the propagating of rushes on the Elmhurst marshes, has made the discovery that the tule will grow so well there that it will more than rival the matting rush hitherto imported at great expense from China and Japan. Professor Stubenrauch of the University of California made an examination of the plantation started last year on land at Elmhurst, donated for the purpose by M. J. Kerwin. He found that the juncus rush, which had been planted os the marshes, had grown remarkably, despite the discouraging conditions under which it was set out. His measurements found rushes that were from twenty-six to thirty-two inches long from root to tassel. As the Eastern manufacturers have said they could readily use rushes twenty-eight inches long, the experimenters feel that this part of the investigation has been successful. There is so much faith in the experiment that 2,000 more roots will be planted. The United States Department of Agriculture, attracted by the success of the venture in Alameda county, has ordered large shipments of the roots to be sent to North and South Carolina and Florida, to be set out on the marshes there.

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With the Citrus Growers

BY J. W. MILLS

THE NEW YORK MARKET

The following article from a special correspondent of the Los Angeles Times, in New York City, presents a ery full and fair reflection of the conditions confronting California's cit-s fruits in the larger markets of e Eastern United States.

"With a little touch of winter dur-g the past week, which ended up in , sixty-mile gale, the orange trade as suffered more or less severely, depending upon circumtsances. Retailers have had difficulty in keeping up their end of the business so far as New York itself has been concerned and sales have been more or less slow. Toward the close of the week it got spring weather again and there was another boom in sales. It is indeed difficult to keep track of the market under such unsettled conditions of weather.

It is noticeable, however, that, notwithstanding the unsatisfactory weather conditions, wholesalers bought as heavily as usual and there has been a fair auction business throughout. The market from first hands has suffered comparatively little, the greatest reduction being about 10 cents per box. But that was speedily regained and prices now are as high as they have been for the past few weeks.

The condition of the market, as it is now, is quite satisfactory for the season. There has been a good demand continuously, even though Floridas have hung on longer than was expected at the beginning of the season and longer than appeared possible from the reports of the probable yield. But there are less of them now than there were in February and a good many of those offered are taken by a special trade and the competition doesn't really affect the market for Californias. Under such conditions the outlook is considered good and most buyers and dealers are looking forward to rapidly increasing movement as the spring advances.

A leading dealer was speaking of certain trade tendencies this spring which seem more marked than usual. For example, there are more inquiries for Californias from outside towns and cities than usual at this season of the year. The market there appears to be improving, partly because the California is better known and partly because there is something about the appearance of the California which commands attention once dealers have seen it. The sale steadily increases wherever it is introduced. It is a fact, that, notwithstanding the large and constantly increasing distribution there are many dealers in the interior who never handle a California orange and do not understand the profit it yields as compared with the Florida from the single fact alone that it does not spoil as quickly.

There is every reason to believe that if these small dealers in interior towns were canvassed and came to understand the value of the California as a means for money making, partly by reason of its more active sales and partly because there is less waste, that they would buy more freely than they do now. It has been suggested that some missionary work of that character be done this season, and possibly it will be. It is reasonably certain that if this kind of missionary work is done there will be big returns from the effort and the money invested in such a move.

All varieties of oranges excepting Californias have disappeared from most of the street stands. This is representative of the city trade. If there are plenty of Californias these street dealers will take them in preference to the others because they will keep better and there will be less loss upon those which are not sold out at the close of each day. As a rule a box of Californias will keep reasonably sound for three or four days at this season of the year and by picking out those which appear ripest, and disposing of them the first day it doesn't make so much difference if the others are unsold at night. The loss will be comparatively small.

Any other kind of orange will show a greater proportionate loss and there will be sufficient in numerous instances perhaps a majority of instances, to greatly reduce the price. The market will not always absorb everything offered though the street sellers understand their market pretty well and seldom get caught. They more often clean up everything they have than not and can carry home their profits in their pockets at night. The loss is so trifling that it doesn't count with many of them.

One thing is astonishing, the steadily increasing numbers of street peddlers. The market appears to be limitless and there are more and more entering the field every year. Nevertheless the increase in population in and about New York and the steadily increasing consumption by each individual makes the market sufficient so far to absorb the offerings of most of these dealers. They suffer from the competition of wagon men more than any other single cause and would be glad to see the wagon men out of business. This competition cuts into the residence districts more than it does anywhere else. There are many men who travel through the residence districts of the city who are never seen in the business portions. Those parts are given over to the street stand and the push-cart man.

The methods of the wagon men are not always what they might be. Possibly one might say that they are not always what they should be. They buy inferior grades of fruit and hawk them through the residence portion of the cities at so many for a quarter or some other small sum of money. The oranges are quite likely to be sour, now and then one is specked and otherwise more or less poor, depending upon circumstances. They give buyers a wrong impression of California oranges and many residents are prevented from buying after the first experiment because they are convinced from the examples they have seen that California oranges are not what they are supposed to be. While the practice is reprehensible it cannot be stopped. It is one of the evils to which all business enterprises must pay tribute more or less and there is no means of preventing the injury which it causes to a legitimate business.

Of course shippers can assist greatly in stopping it, or shall we say that shippers can do much toward reducing this practice by refusing to send forward inferior fruit? If it isn't here the hucksters cannot get it and will be compelled by force of circumstances to buy the best and sell it at good prices. In this way the industry, as a whole, would benefit and there would be less complaint about the inferiority of California fruit.

Lemons have advanced sharply and are now higher than they have been for some weeks. Sales are more active and there is a better feeling in the market. It seems probable that this improved condition will continue and that the future will be of more importance than the past. The market is now in reasonably good condition, with supplies light and demand increasing. Importers are moving with caution and are making their receipts as light as they can possibly be.

The California market is good and sales are steadily increasing, The price holds up under a steady demand from all directions and there is a good deal of promise in the situation, as a whole. The principal difficulty is the small quantity of Californias coming forward. The market would easily absorb considerably more.

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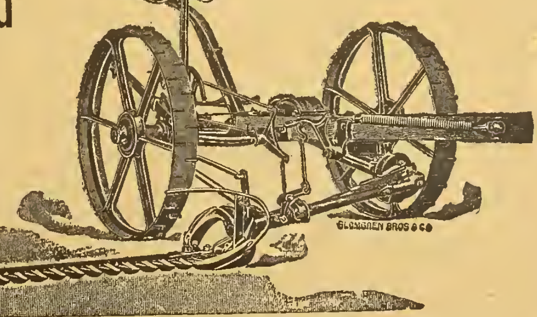

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The Ornamental Garden

BY ERNEST BRAUNTON, LOS ANGELES, CAL.

RURAL HOUSE GROUNDS

One's training for the work of life is begun in the home and fostered in the school. This training is the result of a direct and conscious effort on the part of the parent and teacher, combined with the indirect result of the surroundings in which the child is placed. The surroundings are more potent than we think; and they are usually neglected. It is probable that the antipathy to farm life is formed before the child is able to reason on the subject. An attractive play-ground will do more than a profitable wheat crop to keep the child on the farm.

Bare, harsh, cheerless, immodest,—these are the facts about the average rural school ground.

Children cannot be forced to like the school. They like it only when it is worth liking. And when they like it, they learn. The fanciest school apparatus will not atone for a charmless school ground. A child should not be blamed for playing truant if he is sent to school in a graveyard.

It would seem that land is very precious. Very little of it can be afforded for a school ground. A quarter of an acre of good land will raise four bushels of wheat, and this wheat may be worth three or four dollars a year. We cannot afford to devote such valuable property to children. We can find a bit of swamp, or a sand hill, or a treeless waste. The first district school I taught was on a heartless hillside. The premises had two or three disconsolate oaks, and an old barrel was stuck in the top of one of them. The second school I taught was on an island in a swamp. The mosquitoes loved it.

The school building is generally little more than a large box. It has not even the charm of proper proportions. A different shape, with the same cost, might have made an attractive building. Even a little attention to design might make a great difference in the looks of a schoolhouse; and the mere looks of a school house has a wonderful influence on the child. The railroad corporation likes to build good-looking station-houses, although the-- have no greater capacity than homely ones.

The following sentences are extracted from the "Report of the Committee of Twelve on Rural Schools," of the National Educational Association (1807).

"The rural schoolhouse, generally speaking, in its character and surroundings is depressing and degrading. There is nothing about it calculated to cultivate a taste for the beautiful in art or nature."

"If children are daily surrounded by those influences that elevate them, that makes them clean and well-ordered, that make them love flowers, and pictures, and proper decorations. they at last reach that degree of culture where nothing else will please them. When they grow up and have homes of their own, they must have them clean, neat, bright with pictures, and fringed with shade trees and flowers, for they have been brought up to be happy in no other environment."

"The rural schoolhouse should be built in accordance with the laws of sanitation and modern civilization. It never will be until the State, speaking through the Supervisor, compels it as a prerequisite for receiving a share of the public funds."—L. H. Bailey.

The Riverside Press states that E. T. Allen, State Forester, is in Riverside conferring with representatives of the local water companies and some of the directors of the Chamber of Commerce. Mr. Allen is seeking to interest the various counties of the state in the matter of fire protection for the foothill and mountain territory outside the government reserves. The state law permits the counties to make appropriations for this purpose and thus provide for efficient co-operation with the forest rangers employed on the reserves.

THE "BLACK WATTLE" INDUSTRY

The "Black Wattle" Acacia is extensively grown in California as an ornamental, and it may interest some of our readers to know what a profitable crop it has proven in lands where soil and climatic conditions are somewhat similar to ours.

In Hawaii, in connection with the Tantalus forest there were planted some twelve or thirteen years ago a lot of six acres of this tree. The location was a rocky one with poor and shallow soil. The grove was included in the portion of the area set apart for the Federal Experiment Station. As the trees were not in a healthy condition Mr. Jared Smith, the superintendent of the Experiment Station, caused them to be cut this last spring, the bark removed and sold for tanning material and the wood sold. Careful statistics were kept by him of the results obtained from this small area. By his kindness I am able to present such results to this Association, which are as follows:

The six acres yielded 38 tons of tanbark, 2 tons of which were used as samples and given to tanneries.

Thirty-six tons were sold at $23.[illegible] per ton realizing a total amount of $839.44.

The six acres yielded 500 first-class fence posts which were used upon the station. These posts, if purchased, would have cost 25 cents apiece, making the value received from posts $125.

In addition to the fence posts there was realized 88 cords of fire-wood which was sold at an average of $7.83 per cord, producing a total of $689.25.

Allowing the same price for the two tons of bark given away there would be an additional value of $46.62.

A summary of the amount produced by these six acres of Black Wattle is then as follows:

36 tons of bark sold........	$ 839.44
2 tons of bark given away	46.62
500 posts	125.00
88 cords of wood	689.25
Making a total of	$1700.31

or equivalent to $283.38 per acre.

As stated above the soil on which this grove was planted was rocky, thin and poor and the trees scrubby.

In South Africa the Black Wattle industry of Natal. although only twenty years old, has become one of the most important in South Africa, and exports of bark during 1904 were valued at $350,000. There are at present over 30,000 acres planted. T. R. Sim, conservator of forests in Natal states that there is no other forest tree capable of extensive cultivation which yields a return in so short a time. Complete felling may take place at any period after five years of age, although ten years is nearer the average age at which the trees are cut. The average yield amounts to five tons per acre of dry bark and thirty cords of dried timber. The bark when dry is chopped, shredded or ground and bagged in three bushel sacks, weighing when full, about 184 pounds. At Dalton, which is one of the principal centers of wattle production, the price paid for dried bundled bark ranges from $30.00 to $32.00 per ton, and for bark that had been ground and bagged, $35.00 to $37.50. It costs $1.50 per ton freight from the interior to Durban, the shipping port, and $5.00 per ton from there to Europe. The wood is sold for fuel at from $1.25 to $5.00 per cord, while heavy mine timbers bring about double that price.

PUDDLING LILY POND

Can you give us information as to the proper method of puddling with clay our lily and fish pond? State Industrial School, Ione.

Secure the best of clay, free from stones, etc., and if at all dry or lumpy it must be chopped or tamped into a consistency similar to brick earth or stiff mortar. The pond being all ready for the operation, proper depth and flaring sides, commence the work on the sides, laying the clay from four to six inches thick. Give the same a good pounding, and after drying off somewhat and before cracking give a second pounding, using wooden mauls or mallets. After the sides are finished, proceed with the bottom. See that all is smooth and level, and proceed as with the sides, taking a certain space and completing it until all is finished. Use boards for standing upon so as to keep a smooth surface. Pound as the work proceeds. If the pond is of large dimensions and the weather bright or drying, spray or sprinkle the clay to prevent it drying too rapidly, and thus avoid cracks. To make the clay as firm as possible, go over it again after an interval of a day or two and pound again, then cover the bottom with sand or fine gravel to a depth of four or six inches. The sides should be covered with sandy soil and overlaid with sods to prevent washing by the action of the wind and water. Unless clay can be had for the hauling, a cheaper and better method would be to line the pond with concrete, as there is a great amount of labor involved in puddling a pond with clay.

Prof. W. M. Scott of the United States Department of Agriculture is in Vacaville engaged in the campaign now being waged against pear blight.

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In the Vegetable Garden

BY ERNEST BRAUNTON

LETTUCE

Lettuce is a universal favorite, but few who are acquainted with the Chinese method of culture are willing to risk its use. But as there is no excuse for any one with a piece of ground five feet square, or for that matter, a box of soil, from having a continuous succession of crisp fresh lettuce, no one need be deprived of this refreshing vegetable. The secret of growing tender and sweet lettuce is to force it into rapid growth, a rich loam, well drained and kept mellow by frequent stirring, and possibly protection from a too fierce sun are the main requirements.

EGG PLANT

A few egg plants should find a place n every home-garden; they are exceptionally easily grown and when well-prepared are liked by almost everyone. While classed as a tender plant in some sections they thrive throughout the year when once well established. It is not exacting in soil conditions, and resists hot dry weather well. To produce large tender fruts, the soil should be well enriched and if cut back occasionaly they will continue to bear for a long time.

There are practically only three varieties, as follows: New York Imperial Large Purple, Black Pekin, and Georgian Pearl, the latter an attractive white variety.

CUCUMBER CULTURE

Cucumbers like heat but cannot endure drought. A light mellow soil is best, though good crops are frequently grown on heavy soils so long as they are not permitted to bake and crack. Plow deeply and thoroughly. Mark out the ground five feet apart each way and at the intersection incorporate a large shovelful of well rotted farm-compost. In the hills thus formed sow eight or twelve seeds which will allow for half being detroyed by insects. When the plants begin to send out runners thin to the best three or four plants remaining. Keep the ground well cultivated and free from weeds.

A good preventative from insect injury is to dust the plants with Buhach, hellebore. or tobacco dust, especially on the under side of the leaves. For a few plants it is worth while to protect the fruits with mosquito netting. The planting of radish or turnip seeds with the cucumbers has been recommended as some insects will attack these in preference to the main crop.

Frequent gathering of the fruits as they attain a satisfactory size tends to lengthen the bearing season of the plants, and permitting the fruits to ripen on the vine is certain to cut the season short.

TANNIC ACID FROM EUCALYPTUS

In a comparison between mallet bark, (Eucalyptus occidentalis) and black wattle, (Acacia mollissima), mallet bark contained 39.35 per cent o tannin matter, while black wattle contained but 35.96 per cent. The mallet eucalypt appears to be at home in the southwest of Capc Colony, where extensive experiments are under way. A table is given in a south African report which shows the growth of 37 trees 2 1-2 years from seed. The height varies from 2 to 11 feet and the average is 6 feet 6 inches. The soil on which these mallet eucalypts are growing is declared to be too poor for most agricultural purposes.

NITROGEN BACTERIA ON LEGUMES.

Editor Cultivator: In your valuable paper of the issue of February 23, in an article on page 179 signed by H. O. Sorkness, entitled "Plowing Under Peas," he raises the question as to whether or not the nitrogen in leguminous plants nodules are not lost, to a certain extent by being exposed to the air. If he will refer to Bulletin No. 72, Part 4, U. S. Department of Agriculture, he will find the statement on Page 4 that these nodules do not contain the nitrogen itself, but that the bacteria in the nodules make the plant susceptible of drawing the free nitrogen from the air.

As there seems to be considerable misunderstanding on the subject it might be well to mention it in your columns. Any leguminous plant having a good showing of nodules on the roots is constantly supplying the soil with nitrogen and the plowing under of the crop is principally valuable for the humus it affords which is very considerable.— B. F. T., Covina.

(There seems to be a widespread misunderstanding regarding the value of nitro-cultre on a much more important point than the one under controversy. It should not be assumed that these nodule-forming organisms can replace the necessary plant food, proper cultivation of soil, and other things that are regarded as necessary for growing crops. If the soil is poor the legumes will make a poor growth even if the proper germs are present and no amount of inoculation will produce crops equal to those grown on fertile soils.—Ed.)

THREE SPRAY BULLETINS.

From bulletins published in France we glean the three following extracts through the U. S. Experimental Station Record:

Notes on the use of combined fungicides.—In seeking a combined fungicide for use against the powdery and downy mildew on grapes, the author carried on experiments with a number of mixtures. and the results obtained are briefly given.

Sulphur in a dry state is said to act too slowly, and to obtain a more rapid liberation of sulphurous acid a number of mixtures were tested. Calcium bisulphite and sodium hyposulphite were each added to Bordeaux mixture at the rate of 500 gm, per hecto liter. Both mixtures badly burned the foliage and considerable injury followed their use even when diluted to a considerable extent.

Later the author tried a mixture composed of Bordeaux mixture and an alkaline polysulphid with success. The formula and directions for making this mixture are as follows: Copper sulphate, 4 kg. and water 100 liters, and lime 2 kg. and water 25 liters. After a thorough solution pour the lime water into the polysulphid solution, and this mixture in turn into the copper solution, stirring thoroughly. This mixture is said to be very effective in preventing both forms of mildew, is quite adhesive, and acts as a stimulant to the foliage, as judged from the dark green color of the plants.

A study of combined fungicides.—A favorable report is made of the addition of sulphur to Bordeaux mixture, the combination being applied at one spraying.

Three years' use of this mixture in comparison with sulphur applied in the ordinary way has convinced the writer of its efficiency. The combined fungicide is said to be much more adherent than the ordinary forms, and its greater efficiency is attributed to the fact that the sulphur is deposited much more uniformly over the foliage than is possible when dusted in the form of powder. The acid in the copper sulphate mixture is said to materially add to the adhesiveness of the mixture.

The crystalization of soda fungicides.—The chief difficulty in the use of soda fungicides is said to be due to their rapid deterioration. When solutions of carbonate of soda and copper sulphate are mixed, a colloidal precipitate of a greenish-blue color is formed. Ordinarily after standing for a little time the precipitate loses its blue color, becomes crystaline, and is less adherent to the foliage than when freshly made.

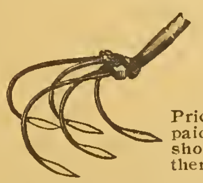
The causes of the changes were studied, and the author says that if properly made the solution should stand for a long time without crystalization. Too great acidity favors crystalization and alkalinity retards it, though too much alkali makes the fungicide thick and less adherent. High temperatures favor crystalization. The use of impure chemicals and utensils that have been used for other fungicides also favors the depreciation of the fungicide. On this account a warning is given that all utensils, spray pumps, etc., should be thoroughly washed before using them for the preparation or application of fungicides containing soda compounds.

OKRA OR GUMBO

From time to time the list of American garden crops has been increased either by the addition of one already in use in the Old World or by the improvement and domestication of our wild species. In the case of the okra the former is true, as it has been in use in the Mediterranean regions for centuries. In the Southern States it has been extensivly used for many years, but up to the present time has been cultivated to only a slight extent in the middle and northern section of this country.

Okra has no great food value, and it is not probable that it will ever become a very important crop commercially, but a few plants form a desirable addition to the vegetable garden. It is used principally for flavoring soups and preparations wherein meat forms an important part and to these it adds a very pleasant taste and mucilaginous consistency. Some persons may not enjoy the flavor of okra at first, but after eating a few times of dishes containing it a taste for it is acquired.

Alfalfa seed weighs sixty pounds to the bushel. For a hay crop sow twenty to thirty pounds of seed to the acre. For a crop of seed sow fourteen to eighteen pounds per acre: sow clean seed. Sow alone, without any nurse crop. The latter is often just as harmful as the weeds. Screen alfalfa seed before sowing, to separate the dodder and other weed seeds.



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You know we could not do business on such liberal terms if our seeds were not as represented. They are guaranteed true to name and the seed grown. Remember, we require no money in advance. Order today, using coupon below, and you will say it was one of the most profitable dollars you ever spent.

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[Write plainly.]

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Address ....

State ....

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Government Ownership Suggested—The citrus growers of the Covina district to the number of 150, assembled in that city, in convention, on Saturday last, passed a set of resolutions expressing their demands for relief in the present crisis confronting the orange industry in Southern California. These representative men, of more than average intelligence, after going over at length the points of controversy in the citrus cases, decided by the Supreme Court, among other resolutions adopted the following in reference to government ownership of railroads. "We demand that Congress appoint or authorize the President to appoint, a commission to ascertain and report all the facts obtainable relating to the manner and cost of obtaining government ownership of railways now owned and operated by governments of Europe or elsewhere; the cost and efficiency of their service, including average running speed of trains, average distance of the haul of freight, and rates of charges for same; average passenger fares, and, in general, all the details which are essential to a complete and true comparison between the results under railroad management by governments and the same under private ownership."

Along the same lines were resolutions adopted last fall by the National Association of cattle growers. The fact that the Interstate Commerce Commission is not vested with authority to enforce its decisions in cases where unjust rates are established, and discriminations are made between shippers, is awakening the public to the importance of the government owning and operating the railroads of the country and the auxiliary industries connected therewith, such as the express business, telegraphs, and cars operated by private right, if relief is to come to the people before they are destroyed by the trusts and owners of the agencies through which their industries are operated. The necessity for immediate and far-reaching action by the government is becoming singularly apparent, when the insufficiency of the supposed means for obtaining redress in case of unjust taxation, arbitrary action and discrimination by railroads, and other great corporations is exposed by the the courts of the land.

Government ownership of public utilities may be one form of socialism, but if there can be found no other remedy for the evils which vast aggregations of wealth have entailed upon us; if the people cannot obtain their rights without resorting to government control of public utilities, then let that condition come. Our last end in any event will not be worse than the present. There are objections to public ownership, but there are also strong arguments to be presented in its support, one of the best of which is that it provides a "square deal" for every citizen.

* * *

Growers Must Decide—The Los Angeles Herald of Monday, the day of the orange growers' convention in Los Angeles, contained a singularly terse editorial declaraton to the orange growers of California, as to which course they shall pursue in the present dilemma in which they find themselves, by the opinion of the Supreme Court rendered in the Citrus Fruit cases, Februry 16, 1906.

The editorial referred to is as follows:

"To the orange growers who today in convention assemble: 'It is up to you."

You have it in your power now, backed by every sentiment of justice and a right cause, to demand from congress a provision in the pending railroad legislation making legal, as it is already righteous, your claim as to the routing of your own goods when you pay the freight for their haulage.

The court has said that this right is not legal. It is up to you to demand that it be made so; it is "equitable" now.

The railroads, aroused by the storm brewing of which this convention can be the forked lightning, are coming forward, bearing rich gifts of promises to be good. They know that while legally right, in equity they are wrong. They wish to retain the legality of their position.

Two courses lie before you: To stand for your rights and decide to maintain them; to send representatives to congress to enforce this demand; to make legal what is already right; to grasp forever the reins in your own hands.

Or—

To be trapped by honeyed words and blandishments; to swallow specious promises to "be good"; to lose once and forever the great chance offered you to throw off the railroad yoke and be free.

Win or lose, if you take the first course, you have won in the end. Win or lose, you can only lose if you "stick your head in the lion's mouth;" some day the jaws will snap.

Which will you do?"

* * *

Growers Organized—The representative citrus fruit growers of Southern California have organized a Citrus League which hereafter will, through an administrative committee, carry on the work of the Citrus industry in California. The committee selected for the work is made up of the following well known fruit growers: F. Q. Story, A. P. Johnson of Riverside; S. J. Beals, of Orange; George Frost, Riverside; S. P. Jennison, Covina; E. M. Lyon, Redlands; H. H. Garstin, Redlands; J. S. Edwards, Highland; G. T. Whitcomb, J. P. Dreher, F. L. Palmer, Pomona; C. C. Teague, Ventura, W. Sprott, Porterville; B. A. Woodford. Upland; W. H. Young, Duarte; E. L. Van Horn, San Bernardino; E. S. Moulton, Riverside; Elmer W. Hart, Azusa;James Fleming, Highland; W. H. Jamison, Covina, James Slauson, Azusa.

It is the avowed intention of this organization to take active and immediate means to secure the enactment of such legislation as will restore to the shipper the right of controlling the routing of his shipments to their destination.

One of the first steps in this direction will be the drafting of a memorial to be presented in Congress by the representatives from this district, urging the passage of the Hepburn bill.

* * *

Who is Responsible—A few nights since a young man was killed in a slugging match at San Francisco. It is the second case of murder, within the ring, in the past three months. The authorities at San Francisco claim they cannot stop ring fights because the law sanctions them. In Los Angeles hundreds of young men and women, too, for that matter, have come to ruin through gambling at the races. The authorities will do nothing, or can do nothing, to close up this mint of hell, apparently satisfied to see it go grinding on, carrying down to death promising men and clerks and girls who have become so infatuated with its revelry that they are unable to resist.

Who is responsible for this state of crime in California? Last winter a bill was introduced in the legislature abolishng gamblng, at fairs and race courses, but it was permitted to lie over until too late to pass. So with other bills calculated to correct the criminal morals of the degenerate public. The legislature simply failed to come to the rescue of the morally weak. More than to any other cause is the legislature to blame for the lax morals which pervade San Francisco and Los Angeles today. It is responsible for the imperfect enforcement of the law, in that a great many of the laws which have been placed upon the statute books of California either hrough ignorance or design, have been so framed as to permit of their easy evasion, have been so framed as to invite a violation of the law and put a premium on perjury.

We can never have the proper enforcement of our criminal laws so long as men in the very legislative halls of the state, while professedly representing the people and their best interests, are, as a matter of fact,—whatever may be the influences controlling them,—representing the violators of the law by providing for them an avenue by which they can escape its punishment.

There is too much playing to the galleries, while at the same time doing no substantial injury to the interests against which their legislation is supposed to be directed.

Now then, where does the blame for such conditions rest, ultimately and finally? What makes this condition possible? Who has the power to provide the remedy? The answer to this question is what concerns us, and we answer unhesitatingly, "The People."

Here is where the final responsibility for the lax condition of our laws rests, for it is the people who elect these legislators to office and who are responsible for their evil doing. If at the primaries dishonest men were relegated to the rear and honest, capable men were chosen to make our laws and to enforce them, our statute books would not be burdened with ineffective laws and our criminal courts would not be full of cases of perjury, bribery, forgery and theft. If the so-called respectable citizen would only discharge his duty to his State, recognize the existence of personal responsibility, and seek to discharge it honestly and fearlessly, we would not be up against such a condition of things as exist today in California.

The curse of this country has been and is the failure of the so-calle decent citizen to discharge his dut or recognize the existence of respons bility whch rests on him individuall and all the time by reason of the fa that he is a sovereign citizen of repu lican government. He does not see to feel any responsibility for this con dition; he has not even given the mat ter enough thought to be able to realize his strength or his power.

Until there is an awakening of the conscience and a stiffening of the public backbone to throw down dishonest candidates for office, we shall go on committing murders, filling our jails and penitentiaries with criminals, while we sit back and wonder why our laws are not enforced and why crime seems to be spreading in these days of expanding light and education.

What the people want to do is to awaken from their apathy, recognize their responsibility as citizens, and do their duty, simply and regularly, at the primaries and at the polls, then will we not banish crime, but abate it, not make men and women wholly moral; but improve their morals, and in so doing, help the future generation to advance toward a better, truer life.

FARMERS' INSTITUTES.

San Jacinto, March 20-21; Elsinore, March 22-23; El Cajon, March 27-28; Rialto, March 29-30; Covina, April 2-3, yours truly—J. B. Neff.

THE TYPES ERROR.

In the article on Kings and Tulare Counties in the March 2 issue of the Cultivator, we were made to say by the types, "Mr. Wilde told me that they have, on the Charles place, 65 cows which net them $60 each per month, outside of the skim milk he feeds his calves and hogs and above the calves produced."

The sentence should have read "65 cows which net them $6.00 per month. This, with the calves and skim milk, ought to bring the earning capacity of each cow about $65 per year.

NEWS OF COUNTRY LIFE IN THE GOLDEN WEST

HORTICULTURE.

Watsonville apples captured the next State convention of the Y. M. C. A.

A grape juice factory is being planned for Rochester, San Bernardino county.

The Vacaville Reporter says fruit prospects are looking very well in that vicinity with the exception of apricots. This crop will be almost a total failure.

It is estimated that 500,000 vines were planted this year within ten miles of Ukiah. The Asti Colony people have furnished 250,000 cuttings free to the vineyardists.

The Earl Fruit Company sent out its first carload of late oranges from Oroville last week. From this time on, about two carloads a day will be shipped.

Orange growers as a rule are opposed to the practice of selling cull oranges to peddlers or the cheaper class of boarding houses on the ground that it injures the sale of the good fruit.

Prof. Bioletti of the University of California has made arrangements at Woodland to plant between forty and fifty imported grape vine roots from France for the purpose of testing their practical value in California soil.

The manager of the Marysville cannery states that all indications are favorable for a very heavy yield in the orchards this season. Peaches are especially promising, and almonds and other fruits look well.

Charles Lukens was in town from Oak Glen Saturday with the last apples from his orchard. The prices received were the largest of the year, being at the rate of $80 a ton, or four cents a pound. This year there was grown at Oak Glen and in that immediate vicinity about 500 tons of apples. For all the fruit marketed there has been but little, if any, sold for less than $50 a ton, and the average price will probably aggregate $60 a ton, making a total of about $30,000 received for the fruit this season.—Redlands Review.

AGRICULTURE.

A sack of Ventura county lima beans has been sent to the King of Italy.

It is safe to say that fully 50,000 acres in this valley will be planted to beans.—Oxnard Courier.

Escondido is to have an arbor day. Her streets are to be lined with trees that will transform the old roads into delightful avenues.

A $20,000 packing plant is assured for Huntington Beach by an incorporation which has just been organized for that purpose.

Manager J. A. Driffill of the sugar factory informs the Courier that they already have contracts for the growing of 14,000 acres of sugar beets, with sufficient acreage in view to swell the total to 18,000 acres.

County Superintendent Hyatt of Riverside, has received from a former principal of the city schools a potted oak tree from an acorn from the giant Mariposa oak under which General Fremont had his headquarters for some time.

The Los Alamitos sugar factory management reports contacts now signed for over 6000 acres of beets. This promises to be the greatest year for beet growing in the history of Southern California.—Chino Champion.

There is on exhibition in Modesto an alfalfa root which measures over seven feet. This tract of alfalfa was planted in April of last year and has been irrigated but once during that time. The plant itself is unusually heavy and bushy, many of the sprouts being eight inches in length at this early date in the growth.—Stockton Independent.

MISCELLANEOUS.

Hollister is about to asphalt its principal street.

The weekly Pajaronian has entered the thirty-ninth year.

The city of Santa Rosa has named a new public school the "Luther Burbank."

The highest and lowest places in the United States are in Inyo county, California.

A new street railway system with ten miles of trackage has been opened at Fresno.

San Diego people are endeavoring to secure an extension of the Salt Lake road to that city.

The Kern River Placer Mining Company has been organized with a capital of $100,000 in shares of $10 each.

A flower show is to be held at Colusa on the 24th and 25th of April in conjunction with the Driving Park race course.

Palo Alto's bond election resulted in favor of issuing bonds for improving the municipal lighting plant to the amount of $50,000.

A boy at Santa Rosa has dislocated his neck in trying to shoulder a sack of potatoes. Next time he will be more careful, if he recovers.

Vacaville, by a decisive vote, has knocked the knockers and has authorized the issuance of bonds to the amount of $25,000 for a sewer system.

In accordance with the will of the late Mrs. Sarah J. L. Loop, of Pomona, $500 has been paid into the treasury of the Fruit and Flower Mission.

Colusa and Glenn counties claim they have raised 1 per cent of the entire wheat crop of the United States in a single season. That is a wonderful record.

There will be no more road poll-tax in Yolo county. By an unanimous vote the members of the Board of Supervisors abolished the collecting of road poll-taxes in that county.

At Visalia, in the San Joaquin Valley, the Board of Trade recently concluded to build a habitation for itself on the Main street in the shape of a two story structure to cost $10.000.

Orange county hop growers at a meeting held February 14th formed a shipping pool and will consign 3000 bales to the London market, which will be shipped by Durst Brothers of Wheatland.

The rangers in charge of the forest reserves in Northeastern Shasta county are enforcing a rule which prohibits the old settlers from carrying their rifles across reserve property without the seal of the ranger.

Public Health and Sanitary Science will be made a special department of the next Summer session of the University of California, from June 25 to August4, 1906, if sufficient applications are received before April 1 to warrant the undertaking.

The latest directory of officers and Students of the University of California shows a total enrollment in the Academic Colleges of 2862 students, of which 349 are graduate and 2513 undergraduates. Officers of administration number 305.

Colusa and Glenn counties are making great efforts to secure the passage of a bill now pending before Congress regarding the diversion of water from the Sacramento River by the Central Canal and Irrigation Company for irrigation purposes.

Arizona rejoices in the action of the United States Senate in passing the Foraker and Burrows amendments to the Statehood Bill. Only a very small coterie, numbering perhaps 5 per cent of the people, hoped to see the jointure of Arizona and New Mexico.

While working along the bank of the Alamo River, Thomas O'Brien was astonished to find hidden under a crumbling bank a number of ingots which proved to be of gold. The weight of the lot was sixty pounds and the estimated value is said to be in the neighborhood of $10,000.

The largest real estate deal ever made in California was the purchase of the Fairmount hotel in San Francisco from Miss Herman Oelrichs by Herbert E. Law and Dr. Hartland Law. The deal involved $6,000,000. The new owners propose to make the Fairmount the finest hotel in the world.

Saturday of last week a whole trainload of hops left Wheatland for Galveston to be shipped to New York by water, and thence to London. The train consisted of nine cars and carried 2654 bales of the average weight of 190 pounds, or a total weight of 694,260 pounds. At the present market price the hops are worth about $69,426, but last year they would have brought $208,278.

Special rates have been agreed upon by the railroads to the University of California Summer session, which begins June twenty-fifth and ends August fourth in connection with the National Educational Association Convention which is to be held July ninth to thirteenth in San Francisco this year. Some of the most prominent men interested in educational work in Europe and America have been secured for this session.

The bacteriology of infectious diseases will be discussed by Archibald R. Ward, Assistant Professor of Bacteriology and Director of the State Hygienic Laboratory at the Summer School at Berkeley. Students will have the opportunity of daily laboratory work in bacteriology and in the microscopical examination of specimens received at the State Hygienic Laboratory. An effort will be made to suit the laboratory work to the individual needs of individual students.

The important problems in water supply and the disposal of sewage which constantly confront physicians and public officials will be the subject of a course of lectures offered this summer at the University of California by Charles Gilman Hyde, C. E., Assistant Professor of Sanitary Engineering and recently a member of the engineering staff of the Massachusetts State Board of Health, which is charged by law with the inspection of the water systems and sewage plants of that commonwealth.

LIVE STOCK.

Anaheim has been experiencing a milk famine.

Marysville is talking of a poultry show next month.

The State Veterinarian is killing glandered horses in Sutter county, so reports say.

The Ontario Record states a movement is on foot to raise a fund to be used in the extinction of the festive coyote.

The Times says: The poultry business of Escondido affords a living for many families, the monthly output of eggs being valued at $10,000.

Thirty cars loaded with sheep were shipped on Saturday last from Red Bluff. Their destination was Los Angeles, a new market in the mutton business which has been opened to Tehama county. In the consignment there were upwards of 3500 sheep.

A pullets egg which is a rare freak is on exhibition at the Sun Drug Store It is abnormal in size, measuring 9 1-4 by 7 inches around. On breaking away the shell at one end three small yolks were removed, together with a quantity of albumen and inside was found another complete egg. of normal size, shape and form.—Riverside Enterprise.

LINER ADVERTISING

Advertisements in Liner Column will be charged 1¼ cents per word. No advertisement taken for less than 25 cents. Eight words to a line.

LINERS

FOR SALE—PHENOMENAL BERRY Plant, any quantity. For terms apply E. Thompson, P. O. Box 630, Fresno, Cal.

FOR SALE—INDIAN RUNNER DUCKS, $6 per doz., eight to ten weeks old. C. H. Goodacre, Compton, Cal.

MAMMOUTH PEKIN DUCK EGGS, FINE Strain, 13 for 75c. Miss Wood, 130 Carey St., near Arroyo Drive, Pasadena, Cal.

ANCONA EGGS (FROM PERPETUAL EGG Machines), imported and domestic matings, $2, $3.50 and $5.00. L. L. Viereck, Pres. Ancona Club, Albany, Oregon.

BLUE ANDALUSIAN EGGS FOR HATCHING, from three noted strains, $2.50 and $3. Incubator lots $7.50 to $15.00 per 100. Mrs. T. R. Griffith, 3111 Walton avenue, Los Angeles.

WANTED—SITUATION BY MARRIED man who understands culture of deciduous and citrus fruits. Good horseman, pruner and irrigator. Address "Orchardist." Care of Cultivator.

FOR SALE—WHITE MINORCAS EGGS $1.50 sitting from one of the nicest pens of Wh. Minorcas in Southern California. Lay the most eggs and the largest-whitest eggs of any breed. Call and see them at 547 W 54 St., or address 1004 E. 9th St. Also incubator chicks for sale.

ELDORADO CONSOLIDATED MINES. Forty-one claims, situated north of Indio, Riverside Co., Cal. Very promising. I have examined them and know of nothing beatter for investment in the State The company is well organized and is vighrously pushing the work of development. Rich ore and much of it. A limited number of shares are offered at most reasonable figures. As geologist and mine examiner. I have had large experience in mining matters. It will pay to look into. Address for particulars, DR. STEPHEN BOWERS, Secretary and Treasurer, 1135 Dewey ave., Los Angeles.

Edison Phonographs and Records at factory prices, delivered free anywhere on receipt of full retail price; largest stock of Edison records west of Rockies; send for circulars. Peter Bacigalupi, 786 Mission St. San Francisco

CALIFORNIA ALFALFA AND FRUIT LAND

Free information about the famous Gridley colony; write for it; garden spot of California; ideal place for a home; rich farming country; dairying, stock raising, fruit growing, fine climate. ***Charles F. O'Brien,*** General Manager, Dept. 47, 30 MontgomerySt.. San Francisco.

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First National Bank, Los Angeles, Cal.

Live Stock and the Dairy

BY MRS. MINNA E. SHERMAN, FRESNO, CAL.

MILKING

The professional milker in California and Colorado receives from $30 to $45 per month and board, for milking a string of thirty cows, and he does only milking—no other work. I have for a long time thought that there were few men who could milk every day, for a year, thirty cows, and do them complete justice. That there are others of the same opinion is shown in the interest taken in milking machines. The one now in working at Haywards, California, is said to be promising, though it does not do away with hand stripping, this, it is claimed, is because the cows are not as yet used to the machine, though one man seeing it at work told me that the stripping was no more than would be found left by the ordinary milkers of a herd. It amounted that evening to two pints from fifteen cows. I thought many of us would think ourselves lucky if we did not find more than that behind the milkers. The point now to be solved is the practicability of the cleaning and wearing of the machine, for if an ordinary man can run it, we gain in saving, but if it takes a hundred dollars a month-man then we are not better off than we were before.

But to return to the ordinary men milkers of today. There is a tendency to milk too quickly for good work. The quick jerky milkers make it painful to the cows and some heifers will develop into kickers. The men bet among themselves as to who will milk a cow the quickest, and some will boast that in six minutes they can milk any cow. Now while they average that, or ten ordinary cows an hour, there are cows that it will take nearly twice that long to milk. It is always the best in life that suffer, as men work with nature, to make every thing ordinary, to smooth off conditions into the usual.

I would rather a man milked twenty cows in three hours than thirty cows in that time. Count that the cows average 24 pounds of milk at a milking this time of year, this is 720 pounds of milk to be drawn in, say actual milking time of 130 minutes, about all that is left after the pails are emptied and the milker shifts from cow to cow, this certainly is too fast to do good work. Yet it is inconvenient to have the fresh cows mixed in with the ordinary ones of the herd, to make them special feeds, I find that the cows if mixed, are not always given the right amount and the strippers will often receive enough grain to make them sick, if in with fresh cows. Now the way out seems to be to milk these fresh cows three times a day and shorten the string. If the string is left the same length it will surprise you to find that the gain in milk from three milkings a day is so slight, but shorten the string and then the milk will show up, for you will be getting it all and the cows that were giving six gallons a day now rise to eight and nine and some a little more, so the average will go up to sixty-five pounds per day per cow. While it always creates dissatisfaction to cut the strings up, for when the strings have again to be increased and the cows dropped from the three times a day class, the men feel they are abused to have so long a string again. The milk produce must be largely increased if it is desired to make the increased expense of labor pay a profit.

The present wages make butter making more profitable than the production of sanitary milk. Indeed, the consumer in many places is not paying the dairyman enough, and it is only a short time until the price of mulk must go up, if the price of labor does not come down. The beef trust was broken by the people of the East by using milk and eggs when the price of beef went too high, yet the dairymen did not make fortunes, though the use of their product was increased.

When a new milker is hired, usually the dairyman is so glad to see him that the way in which he milks is not observed. I have lately had some experiences with southern white milkers. Some of them strip with two fingers and have never learned to milk with the hand, yet they have recommendations from the milkmen they have worked for. Some milk cross-handed, instead of milking the udder squarely, the two front teats and the two back teats at the same time. They claim the teats that connect with the same bag of milk in the udder are the right hind teat and the left fore teat, or the reverse. They argue that the milk is all formed and ready to be drawn at milking time. When I tell them that there is only about a tablespoonful of milk secreted the rest forming as it is drawn, they are sure it is a fable. The unwillingness to learn make these men all most useless in California. Indeed, two returned from this ranch saying that there was no work in California for men; that we wanted them to know too much for the wages; that fifteen dollars a month is better at home. I would not be surprised if that was so, for it is hard for ignorant people to change their ways. The Irish, with their ready acceptance of new things, make the best of ranch laborers. "Bob" is one of our treasures. He is a Peniel Mission boy, from Ireland, and ready to milk in the morning, run an engine at night, always with a hymn or a tune on his lips, singing away, for Bob is a joyous Christian. I wish I had a dozen men like him, clean morally and physically. The hardest task is to make men clean. My neighbor whose new bunk house is completed with fine bath room and showers, finds that the men think they are commendably clean with one bath a week. The dairyman is often hard up against it in milkers, for the cows must be milked. There is no such thing as closing down.

The milk veins must be pumped regularly twice a day. Now if the dairy inspectors would stand by the milk man, "hold up his hands," the difficulty would be lessened. If the rebukes fell on the unclean milkers, telling them they must wash their hands and clothes and that their names would be listed, so it did not matter if they resigned or not, this record would show that they had been reprimanded for dirtiness.

As it is, the milkers stand against their employers in saying they will not bother with cleanliness. A milkman who visited here some time ago told me of one of his milkers thinking it a joke, to give the inspector "[illegible]" on the habits of himself and the other milker employed. When the man found out the mischief he had done his employer he tried to retract, but was not listened to, as then the story was too tame for the papers.

The milking machine at present looks as though the dairyman's millenium is about to dawn, and may it soon come to relieve this portion of the farm life of it's worry and perplexity.

KICKING COW

A subscriber wants to know how to cure a kicking cow. Here is one rule given by the Country Gentleman:

"The habit may be cured in a very simple way, provided the milker has sufficient self-control and tact in handling animals. Taking a good short whip under the left arm, let him begin his milking as usual, and the moment the cow raises her foot to kick, give her one single cut with the whip. Never repeat this until she starts to kick again, and each time resume milking with a quet stroking with the hand and a kind word. Receiving one cut from the whip each time she raises her foot to kick, the cow quickly associates cause with effect, and gives up an action which produces a painful sting. This method is wholly ineffectual if the milker loses his temper and gives the cow several blows; equally so if he neglects to strike her with the whip when her kick does no harm.'

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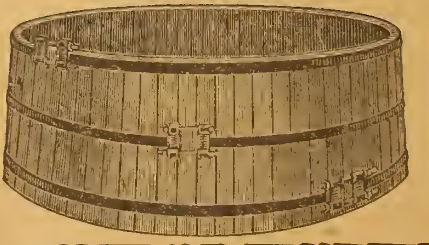

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POLISHING HORNS

Editor Cutivator—Please tell me how to polsh cows' horns. Mrs. F. E. S., Atwater.

Tie the cow so she will not throw her head, then take fine sand paper and rub the horns until all dirt, rings and pips are smoothed off. Follow this treatment with vaselene smeared on the horns, and well rubbed in with a soft flannel cloth. Some persons put vaselene on two or three times before sandpapering to soften the rings and make them come off easier. If the cows are old the polishing process will be slower.

BREEDING OFF HORNS

Mr. Geo. E. Stevenson, Waverly, Pa., writes the Country Gentleman:

In 1884 I bred two native muley cows to a registered Holstein bull and obtained two heifer calves without horns. I bred these two heifers again to a registered bull and obtained two heifer calves without horns. I pursued the same system of crossing back to the registered Holstein until I obtained a bull without horns and 7-8 Holstein. Then for two years I used the 7-8-blood Holstein bull on the polled females, ranging from 1-2 Holstein to 7-8 Holstein; then for two years used on the polled females a registered Holstein bull. I then used the polled bull from the last cross, bing 15-16 Holsteinfi for two years on females ranging from 1-2 to 31-32 Holstein. My last cross was from a 63-64 Holstein polled cow and a registered bull, giving me a bull calf 127-128 blood Holstein and polled.

I used this bull last season, and of six calves already dropped since November, four have been polled and two have been horned.

During all these years 90 per cent of the heifer calves from the registered Holstein bulls and polled cows have been polled and 60 per cent of the bull calves have been polled, demonstrating the truth of Darwin's proposition that "animals and plants in domestication show a tendency to discard those parts of their anatomy that are no longer necessary or useful for their protection or maintenance."

My herd now contains no animals less than 3-4-blood Holstein, and all free from horns. I believe that a few generations of breeding from the crosses I now have will permanently fix the polled characteristic."

THE MILKING MACHINE

It is estimated that over a million dollars have been expended in machinery and experimental work with different milk machines. Reference has been made to several dairies in New York which invariably express high satisfaction with their work. "They are reaching far beyond our expectation," says one dairyman, "milking the cows quicker and better than by hand. The milk is much cleaner and the cows are giving a steady gain in pounds over the hand process. Another important feature is that with milk machines the product can easily be kept at a high sanitary point, no dirt getting into the bucket. Successful milk machines will remove one of the greatest obstacles in the way of profitable dairying." Mrs. M. E. Sherman, the Cultivator's Dairy Editor writes of the milking machine this week.

SHEEP ON FARMS

In the range country it requires a very large territory to keep a small number of sheep. Some years the climatic conditions are such as to tax the range severely. The result is that there is much suffering among flocks and loss to their owners. This is sure to come where flock owners fail to provide sufficient forage to bridge over seasons of shortage.

The mistaken idea that it requires poor and rough land for sheep should forever be relegated to the forgotten past.

"Last year there were distributed from Chicago, for breeding purposes, says the Iowa Homestead, "100,000 ewes. To the average breeder that would appear to be a large number When that number has been been compared with advantages of keeping them it will be found that but a small percentage of the farms have been provided. Why, this number of sheep would only be sufficient for the demands of one week in the Chicago market, and there is a great territory contiguous to that market center where sheep could be kept to advantage.

"Seven sheep to be grazed per acre. These acres are growing no poorer. These seven sheep will produce seven lambs; under good management, more. The wool from the seven sheep and sale of the seven lambs on or about the time they are one year old will bring a much better rent than any tenant is willing to give and instead of the land becoming poorer it is becoming enriched. One hundred dollar-land is not too good for sheep. In fact we know of no way $100 land can be kept up as easily as it can by the aid of sheep."

NECK YOKE SAFETY STRAP

The Country Gentleman gives a short description of a contrivance which a veteran horseman has just put out which is good to use on the ordinary double harness. A ring to which two straps are attached is slipped over the end of the pole, each strap being brought once around the neck-yoke on either side, put through the collar and buckled. In case the neck-yoke breaks, this strap is sufficient to take its place, supporting the pole and preventing the catastrophe that otherwise would occur.

Sheep growers of Maryland are urging the legislature to pass a law to check the ravages of sheep scab. Losses from this cause on hundreds of Maryland farms aggregate tens of thousands of dollars annually. One cause is the great number of sheep brought from the West; many of them suffering from the malady.

WHY DAIRY FARMING PAYS

H. W. Potts, of the Hawkesbury Agricultural College, in Australia, thus summarizes the advantages of dairying:

1. It takes less fertility out of the soil than any other form of agriculture, and hence it is useful in following a well-regulated system of rotation.

2. It can be combined readily with other forms of agriculture or horticulture.

3. The dairy provides in winter a quantity of stable manure in which the straw from the barn is profitably utilized.

4. The by-products from the cow skim-milk, whey, and buttermilk, are a source of income in raising pigs and calves.

5. Dairying gives constant and regular employment of a light character to every member of a farmer's family.

6. Dairying inculcates habits of punctuality. industry, cleanliness and thrift on the farm.

7. Cheese and butter are condensed products, and the cost of carriage, in comparison with their value, is less than that of any other farm product.

8. The demand for good butter and cheese on the world's markets is unlimited, and, so long as the quality is maintained an all-round, even and profitable price can always be secured.

9. The monthly check from the factory provides the mainstay in the household, as against the precarious returns from yearly crops.

10. In mixed farming, the income from the dairy is the most reliable.

11. The farmer's household, as a result of the dairy work, is always supplied with fresh milk and cream, butter, cheese, pork, bacon and veal.

12. Storekeepers, traders, bankers, financial men and politicians all fully realize, after years of experience, that wherever dairy farming is conducted farmers are most prosperous, mortgages are rarely found, and the value of landed property becomes considerably enhanced.

IMMENSE BUSINESS IN SHEEP

During the year just closed Haley & Saunders of Salt Lake bought and sold 760,636 sheep, purchases being made in California, Oregon, Idaho, Montana, Nevada, Utah, Colorado, and New Mexico.

Eighty per cent of the vast number of sheep purchased were shipped directly to eastern markets, the remaining 20 per cent being disposed of on the ranges.—Salt Lake Tribune.

BERMUDA GRASS.

Editor Cultivator: As I have been a subscriber of your valuable paper for two years, I would like to ask a question. Would crude oil put on a patch of Bermuda Grass kill it, and can you still raise a crop on the land the following year, or say, put on the oil a little while to soak in and then burn it, would it kill the grass then?—J. T., Anaheim.

Bermuda Grass is as persistent as any plant we have, and oil enough to kill it will render land unfit for any other crop for some time. By allowing it to go undisturbed until next year the oil would mostly dry out of the soil. By deep plowing you would probably be able to grow any crop, but the matter of applying oil to soil is a serious one.

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Having sold my ranch I am forced to sell Golden of Biltmore. 60082, a grandson of Golden Lad's. Golden of Biltmore is one of the best, ***if not the best*** sire on the coast, several of his daughters less than two years old selling for over $200 each. Highest bidder for next sixty days takes him. If everything is not just as represented, I will give anyone the ***bull free of charge. I sell on merit.***

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Pure St. Lambert Bull
—ST. LAMBERT OF RAMONA, No. 62633,—
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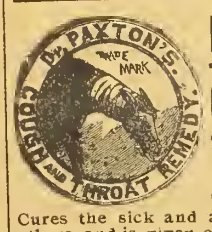
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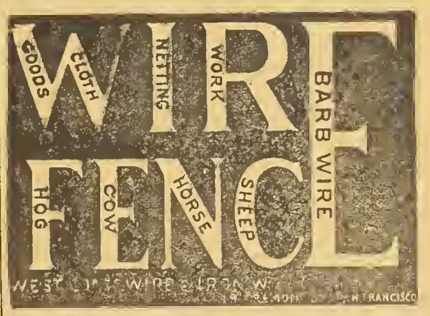

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Profit in the Poultry Yard

BY MRS. A. BASLEY, HOLLYWOOD, CAL.

PURE BREEDS VERSUS SCRUBS.

This question of breeding in line has been before our readers for several weeks, but I have not yet considered the "no-breeding-at-all" side of the breeding subject. It might have come under the head of "cross-breeding," if I had wanted to handle the subject with gloves, but I really think it is better to call a spade by its own name and a "cross-bred in the second generation degenerates into a scrub.

A point that the average farmer's wife does not seem to understand is the importance of keeping one breed only if the flock is all to run together. It will not do to mix the breeds, especially in winter when eggs are high and you want to have plenty. Why not? Because the different breeds require different handling. The treatment that will suit a Brahma, for instance, will not suit a Leghorn.

If, for instance, wou have a flock consisting of Leghorns, Plymouth Rocks and Langshans and you feed them all alike, and treat them all alike, you evidently cannot suit them all. It would be somewhat as if a man were to house and feed a draft horse and a trotting horse or a pony alike, or a beef and a milch cow. Of course the hen and the horse and the cow would all keep alive, but it ought to be evident to any one that they are not existing under the best conditions, or conditions where they will be the most profitable to their owners and it is the profits we are after.

Fowls may be roughly divided into three classes, the Asiatics (the Cochins, Brahmas, and Langshans,) the Mediterraneans (Leghorns, Anadalusians, and Minorcas, and Spanish) the Americans (Plymouth Rocks, Wyandottes, Rhode Island Reds, etc.) The Asiatics are great meat producers, but lay comparatively few eggs, the Mediterraneans are great egg producers, but are light weight and are not considered good market fowl. The Americans are the all purpose fowl. between the other two. The Asiatics have been compared to the draft horse the Leghorns to the trotting horse, and the Americans to the general purpose horse.

Would it pay any farmer to mix up these breeds of horses or to feed and treat them alike? Let him cross and recross his diverse breeds of horses cows, hogs, sheep, and what will he finally have? Nothing but scrubs.

Scrubs may be all well enough in their way, but the great trouble is that you can never know what a scrub will turn out to be. You can never depend upon it. It may be good, it may be bad, it may be nothing. On the other hand if you have a pure breed of any animal, cow, horse, sheep pig or hen, you can be reasonably sure what that animal will be, what it will do, with some degree of certainty, not always may be, but surely with more certainty than you can count upon a scrub.

If you have Cochin eggs in your incubator, you know just what kind of chicks you will hatch. If you have Leghorn eggs you know just what to depend on. You can make your plans accordingly. If you have Cochin chicks you will not plan for many eggs if you have Leghorns you will not count on having much dressed poultry for market, but can count on having a large number of eggs to dispose of. With pure breeds you can depend on these things with some degree of certainty.

If, on the other hand, you have a lot of hens that are a mixture of various breeds, you can depend on nothing. You will only know what you have when they mature. You can count on nothing certain in the way of either chickens or eggs. That is the reason why men who make a living from poultry keep their breeds separate, and do not let them all run together.

* * *

If vou absolutely must have mixed fowls (this is for a dear friend of mine) choose all your fowls of one class, for instance, choose all of the Mediterranean class, if you want white eggs, you can then feed them alike, and care for them alike and they will do better than yours have in the past, although it makes one shudder to think of what may result from a Leghorn-Minorca-Blue Andalusian cross, it still will develop into a less objectionable and a more easily handled flock than your present one of barred Plymouth Rocks, Minorcas, Leghorns and Buff Cochins.

With the flock all Mediterranean, you can feed them all alike and not have the same experience as in the past, some so abnormally fat they could not lay, whilst others seemed thin, so thin that they did not lay, you will also have the same colored eggs, and not all shades and sizes.

The Leghorns being nervous and much more active than the Cochins require a wider ration that is, one more fattening. Or if you want to keep the general utility fowl keep to the American. The Plymouth Rocks, Wyandottes or Rhode Island Reds, are the most popular Americans. require the same sort of food, the same amount of food and the same care and handling and you will know what to expect from the chicks, and the eggs will be about the same color, and size.

"Cross-breeds," "no-breeds" and "scrubs" are a snare and a delusion. They are not as healthy as the purebreds, and you cannot count upon them for anything at all, either as meat for the market or as egg producers.

My advice is to keep one breed only, the one you most like, and breed that one for all that it is worth—breeding your best fowls and from those only. Develop a good egg-laying strain, keep them clean and comfortable, give them exercise and plenty of the proper food and you are sure to make a success of it. And for my friend whose flock is always a trial to me, I would say, decide upon one breed, kill off all those scrub active, lively cockerels, and get one pure bred cockerel and some settings of pure bred eggs before the season gets too late and next year try only pure breds.

One of the best preparations to prevent a fence post from rotting is to mix linseed oil and pulverized charcoal to a consistency of paint and paint the post with it. A post prepared with this preparation set for seven years is said to exhibit but little or no signs of decay.

BRIDE TEN MINUTES OLD.

A young woman in Westphalia was to be married recently but it was found that her birth had never yet been recorded, which made her a marital impossibility.

He birth was then registered and according to the documents preceded her marriage by about ten minutes, making her the youngest bride on record.—New York Tribune.

THOROUGHBRED BUFF ORPINGTON Eggs - - $1.00 per Setting of 15
Large Mated Homer Pigeons $1.00 per pair.
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$8.00 COCHINS $8.00
A Trio—Buff, Black or White
Send for circular, giving undefeated show records. These are the best winter layers, finest table fowls, and by far the most healthy and hardy. Eggs, $2.00 per setting of 15. Prize winners, Eggs, $3.
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One big carload of "Old Trustys" sold on Free Trial.
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Buff Orpingtons and Barred Rocks Pure Bred Stock
Eggs $1.00 per 14. Incubator lots, $5.00 per 100
85 per cent fertility guaranteed.
Also, a limited number of Toulouse Goose Eggs at 15c each. Telephone 1767.
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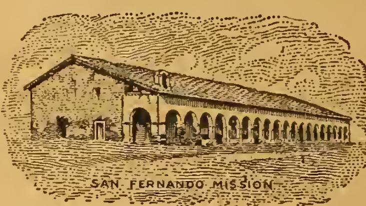

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Largest Breeder of **WHITE WYANDOTTES** on the Pacific Coast.
¼ **Wild Mammouth Bronze Turkeys.**
1906 Winnings 32 Prizes Write for Circular Clear Eggs Replaced
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PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK
BUYS THE WORLD'S FAMOUS EGG FOOD NO. 4
MIDLAND
IF YOU WANT EGGS
YOU WILL FEED NO OTHER
Used by all the largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders
The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the **GOLD MEDAL** at the St. Louis World's Fair for greatest hatch, with 40 different makes of incubators in competition. How's that?
St. Louis, Mo., Dec. 8th, 1604.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A Filcher, Commissioner.
And Now Comes New Reward for Merit:
Read the following telegram received from the Lewis & Clark Exposition at Portland:
"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."
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PETALUMA INCUBATOR CO.
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San Francisco Office and Salesroom, 33 Market St.

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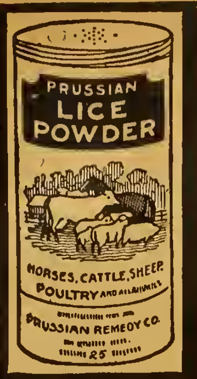

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Cattle, Hogs, Sheep, Etc.
Easy to apply—dust it on.

"Rids calves of Lice"—C. Voss, Armour, S. D.
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Price, 25 and 50c a Pkg.
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SHADE'S Rhode Island . . . Red Farm
Automatic Chicken Feeders.
Shade's Egg Food sold to cousumers only.
San Bernardino, - - California.

Silver Spangled Hamburgs— Eggs for sale. Vigorous stock, eggs sure hatch. Pullets ten months old have laid 100 eggs and still laying. Los Angeles Sunset 'phone Flora 2209. Pasadena Sunset Suburban 185. Arroyo Verde Springs, Pasadena Avenue, main road, near Ostrich Farm, South Pasadena, California.

Chickens and Eggs
Having handled Poultry in this market for the past thirty years, we can give you the best results and prompt returns.
D. E. Allison & Co., Inc.
119-123 Washington St., San Francisco

White Wyandottes
Eggs for hatching from 5 pens of standard birds. 1st Cock, 1906 L. A. Show and other prize winners. $10 per 100, settings, $1.50, fertility guaranteed. Special matings and stock a matter of correspondence. *Mt. Holly Poultry Yards,* E. W. Preston, Prop., *Hollywood, Cal.* Sunset Phone, Hollywood, 901.

EGGS FOR HATCHING
from a heavy-laying strain of
SINGLE COMB WHITE LEGHORNS
I guarantee 100% fertile. Write for prices.
Golden State Poultry Yards, Lordsburg, Cal.
T. E. Mills, Prop. Home Phone 1720

SONOMA-AMERICAN
INCUBATOR
Send for large circular fully describing these machines.
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Eggs Wanted for Hatching
Our big adobe incubator brings the best results. Send us your eggs and we will return the chickens. Young Chickens and Turkeys Wanted.
Bamboo Poultry Ranch - Glendale, Cal.
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BARRED ROCKS
EXCLUSIVELY
Send for 16-page 1905 Catalogue
H. R. CAMPBELL
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Mountain View Poultry Ranch
S. C. White Leghorns—Heavy layers. Eggs, $1.50 per 15, $5.00 per 100.
Indian Runner Ducks—Males for sale. Eggs, $1.00 per 13, $3.00 per 50, $5.00 per 100.
Mrs. J. L. Updyke - Fullerton, Cal.
Successor to Jacob Kreger

Rose Comb White Leghorns
High Grade Buff Orpingtons
Varian's Poultry Yards
P. O. Box 666. Home Telephone 1886
895 N. Catalina Ave., PASADENA, CAL.

Little Chicks Just from the incubator of the following varieties and prices:
White and Silver-Laced Wyandottes
$12.00 per 100
White and Barred Plymouth Rocks
$10.00 per 100
Black Minorcas $8 00 per 100 | White Leghorns $7 00 per 100
These are all from first class stock—none better at the above price. We guarantee safe delivery anywhere we can reach within 72 hours of San Jose.
J. S. SMITH,
Box 526 SAN JOSE, CAL.
Hatchery—450 W. Santa Clara St.

EDITORS QUESTION BOX.

Lice Mites. (H. S., Riverside.) I would like to ask the best and most convenient remedy for the yellow chicken lice on hens; also if the head lice on little chicks are same kind, and if the little red mites do not kill off the hen lice. It seems that my hens don't have both at the same time.—Riverside.

Answer. For yellow lice on hens, powder them well with Lambert's death to lice, also paint the bottom of a barrel (I use a piece of newspaper painted at the bottom of the barrel) with Lee's Lice Killer, cover with a gunny sack, and keep hen in for two or three hours. Look for nits (eggs), and pull the feathers out on which they are, putting the feathers into kerosene and burning them.

For head lice on little chicks, carbolic salve or carbolated vaseline is the best, or take some warm suds put in a half teaspoon of carbolic acid to a quart; take an old tooth brush and once a week brush each little head carefully over. Do it in the morning on a sunny day.

I wish the mites would exterminate the lice. You must be thinking of Dean Swift's saying (was it his?).

"Big fleas have little fleas
Upon their backs to bite them.
And little fleas have lesser fleas,
And so ad infinitum."

Fleas and lice are commencing earlier than usual this year, so much so that I think next week we must take them for our topic.

* * *

GEESE.—(Mrs. W. F., Chino.) I am a reader of the Cultivator and I come to you to ask if you can help me any about my geese. I have one goose that lays a soft-shelled egg, every other egg. They have water to drink and to swim in. They have shell to eat. I feed them green barley at noon, morning and night; they have barley and corn. I give them Swift's meat meal. I keep them in a large correll. If you can help me I woud be very glad. My geese are a year old.

Answer. Geese are birds that graze like cows or sheep, and they will not do well unless they have some green grass or alfalfa, or a awn to graze on. Your goose is not getting sufficient green alfalfa and consequently the oviduct is in an unnatural state and cannot secrete the proper material for the egg shell.

Give the geese crushed oyster shell and either green alfalfa or afafa hay cut in one-fourth of an inch length and scalded. Also provide them with plenty of coarse sand or grit. Green barley is good, but there is not enough lime in it to make good firm shells.

* * *

Various Questions. (Subscriber Riverside.) Editor Cultivator.—Will you kindly answer the following questions and oblige a subscriber.

How are thoroughbred fowls identified? Are they registered as are live stock?

How long can eggs for hatching be kept? At what age are a hen's eggs the best for hatching?

What breed of chickens are Asiatic, American and Mediterranean

Is it possible to determine whether an egg is fertile or not before starting incubation?

Would White Plymouth Rock pullets hatched in November moult the following fall?

Answers. Thoroughbred fowls can only be identified by their leg bands riveted on their legs. Some also have holes punched in their feet. They are not registered like other live stock.

The sooner after eggs are laid that they are incubated the better and stronger will be the hatch; they can be kept three or four weeks, but the hatch will not be very good.

I have found two or three year-old hens give me the strongest, largest chicks.

Asiatics are called by Chinese names Cochin, Brahma, Langshan. American breeds are those made in this country by the judicious and careful crossing of some of the foreign breeds to get the general purpose bird. They are the Plymouth Rocks, Wyandottes and Rhode Island Reds.

No.

Yes, they would probably moult early and begin to lay again in the early winter.

WATER GLASS.—(R. M. B.) Will you give me the water glass receipt for preserving eggs? Please let it be given in next week's Cultivator.—R. M. B.

Answer. The water glass receipt is: take ten quarts of water that has been boiled and is cooled, add one quart of water glass, stir well, pack the eggs in a crock or a jar or a wooden bucket, pour the mixture over them, keeping them always at least one inch below the water by placing a board and stone on top. If you had given me your office address I would have answered by mail.

WATER GLASS OR LIQUID GLASS.—(M. K., Oxnard.) Editor Cultivator: Will you please answer me through your valuable paper the following questions and oblige yours truly: Where can I procure silicate of soda or water glass, is there two kinds or not? How much is it per lb., in 5 or 10 lb. lots?

Answer. You can procure water glass, silicate of soda at most drug stores. In Los Angeles the Sun Drug Stores sell it at 85 cents for one gallon or by the five gallons at 65 cents per gallon. The Owl Drug Stores sell it at $1.00 per gallon for one galon or 90 cents per gallon quantity and 80 cents per gallon by ten gallons. There are two kinds silicate of soda, and silicate of potash. the silicate of soda is the cheapest.

COOPS.

What is the best way of making coops for poultry. Do they have to be built as strong and expensive as in the East, where the winter is longer and colder?

Coops need to be built light. Cracks through which draughts flow are productive of roup. Plenty of ventilation, however, is necessary. Coops built on stilts where the air circulates beneath the roost are sanitary. They must be made strong enough to resist wind of course.

SCALY LEG.

Did you notice an ugly incrustation on the legs and toes of the old fowls the past season—a dirty roughening of the surface, which gave you a feeling of disgust, when you were obliged to handle them? This is scaly leg, and if there is one of these old fowls housed up with the young stock the entire flock will be affected in the same manner next summer. Scaly leg is a parasitic disease, and it will be passed along from one generation to another until means are taken to destroy the parasite which gives rise to it. It is not a difficult matter to destroy the scaly leg parasite. Kerosene and lard will do the work very effectually; so will a few drops of carbolic acid mixed with a cheap grade of olive oil. A few applications of this to the affected parts at intervals of two or three weeks is death to the parasite, and after that the scales will loosen and fall off. In bad cases the legs will never be restored to their original smoothness, but their appearance will be greatly improved. If one application of the mixture is made to the legs of the pullets and cockerels, and the perches are occasionally painted with kerosene, you may be assured that this unsightly disease has been banished from your flock. Scaly leg must not be confounded with bumble-foot, which is a much more serious affection. The latter is confined to the under part of the foot, and is a soft, pulpy ulcer which exudes pus and blood when punctured, and it should be treated as any other ulcer. It is hard to cure, and it does not pay to attempt it except in the case of very valuable birds.

Paint the interior of the henhouse with Portland cement and skim-milk. filling all cracks thoroughly. It will help check mites.

A hen is an everlasting eater. She pays well for good food. For poor food she pays nothing.

It would be well for those who refer to the poultry industry as a small business to ponder on what the Hon. James Wilson, Secretary of Agriculture, says in his recent report of the hen and her products. "The farmer's hen is becoming a worthy companion to his cow. The annual production of eggs is now a score of billions,

200 Eggs a YEAR From One Hen

CAN YOU show this record?
How many possible eggs have you lost—eggs which you might have had—if you had been using a feed which had been tested for you.
A Feed which makes a 200 egg Hen out of a Scrub, and makes a 200 egg Hen lay 225 to 250 eggs a year. Figure it out.
How can you afford to make expensive personal tests, when
PURINA POULTRY FEEDS
will bring out every egg your hens are capable of laying. A feed which will bring EGGS in Winter as well as in Summer—40c Eggs as well as 12c Eggs—from ALL your hens.
And you don't have to take our word for it, either—just try PURINA FEED at our expense, and believe the evidence of your own senses—that's all. It won't cost you a red cent to prove us right or wrong.
If the results don't come, just tie up the bag and write us, and we will return every penny of your money and tell you what to do with the unused feed. You are not out a cent in making the trial, for we will supply you through your dealer or direct FREIGHT PREPAID and the feed used in testing costs you nothing.
This is the Money Back Line—
Write today for particulars about our FREE TEST Plan.
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PACIFIC COAST MANUFACTURERS
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Brown Leghorn and White Rock Eggs
For Sale, $1 per 13, $6 per 100, also two fine White Rock Cockerels at $2 each.
Willis F. Wiesmore, 835 High Ave., Redlands, Cal.

Indian Runner Ducks
Eggs for hatching from fine, healthy, thoroughbred stock. Egg, 75c per 13. M. T. Taylor, 256 N. Eastlake Ave., Los Angeles, Cal.

White and Buff Wyandottes
Prize-Winning, Egg-Laying, Wealth-Producing Strain.
M. E. DILLINGHAM, SAN GABRIEL, CAL.

Young Half-Wild Turkey Gobblers For Sale
Turkey Eggs from pure bred Mammoth Bronze, $4 per 13
Mrs. N. Frank Morse - Fullerton, Cal.

White Plymouth Rocks
First class stock. Eggs, $1.00 per 13, $2.00 per 30. Indian Runner Ducks—$1.00 per 15, $2.00 per 33. A few ducks for sale. H. S. Thompson, 125 W. Avenue 54, Los Angeles, Cal.

Buff Wyandottes
Trios. $6 to $15. Cockerels, $3 and up.
O. S. Hofman San Jacinto, Cal.

White Rocks Exclusively
Limited number of young birds. Eggs from prize winning, producing strain, $2 per 15 or $5 for special mating. Write for circular.
Mrs. Rhoda E. Durfee, 1110 W. 1st St., Santa Ana, Cal.

Banning Poultry Yards
White Leghorn and Barred Rock eggs for sale, $1.00 for 15, $4.00 per 100. Fertility guaranteed. Correspondence solicited.
Morris Bros., Props., Banning, Cal.

THOROUGHBRED YOUNG CHICKS
White Leghorns, 10c.
White Ply. Rocks, 12½c.
Wm. A. GREEN, Box 401, ANAHEIM, CAL.

Blue Andalusians
At Los Angeles, 1906, our strain in a class of 68 Andalusians with 16 birds won more firsts than all our competitors combined. Eggs, $2.50 and $3.00 per 14.
Blue Ridge Poultry Yards, 128 Avenue 32, Los Angeles

Buff Plymouth Rocks
A few fine cockerels $2.00 to $4.00 each. Eggs, $2.00 for 15. Very choice Eastern stock.
F. W. Tutin, Riverside, Cal.

Eggs from World's Fair Buff Leghorns $3 per 13, $7.50 per 100, $5 per 50. Commissioners' Cup for best display California bred poultry at Lewis and Clark Exposition. *Barred Rock* eggs, $1.50 per 13. *LINDGREN BROS., Kingsburg, Cal.*

SINGLE COMB WHITE LEGHORNS
Thorough-bred Stock. Eggs, $1.50 per 15
INDIAN RUNNER DUCKS
Eggs, 1.50 per 12.
Send for illustrated catalogue
John P. Boden, 638 Second Street, Watsonville, Cal.

$12.80 For 200 Egg INCUBATOR
Perfect in construction and action. Hatches every fertile egg. Write for catalog to-day.
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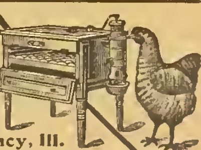

S. C. WHITE LEGHORNS
I can furnish you with first-class eggs that will hatch strong, vigorous chicks, and give you satisfaction. $2.00 per 15, or $7.00 per hundred. Stock for sale. All eggs and stock purchased of me shall give perfect satisfaction. I make this a point.
Monte Vista Poultry Farm
L. D. Pettit, Mgr. *Corning, Cal.*

HUSKINS' WHITE WYANDOTTS

Prize winners for two years, 1905 and 1906, at L. A. Eggs for hatching from standard bred stock, $1.50 per dozen, or if you mention Cultivator, will send thirteen.

A. W. Huskins, 713 Waterloo St., or 541 South Main St., Los Angeles.

Rhode Island Reds

Record making layers; average per hen, whole flock, 180 eggs for '05. $1.25 per setting, 2 settings, $2.00; incubator lots, $6.00 per 100.

J. S. ENGLISH, R.F.D. 112, Gardena, Cal.

BRONZE TURKEYS

Hart's strain. Winners of five firsts at Los Angeles Show, '06, and always winners wherever exhibited. Write for prices.

ED. HART, CLEMENTS, CAL.

White Plymouth Rock Poultry Ranch

Eggs for hatching from First-Class Stock $6.00 per 100, $1.50 per setting 15 eggs.

J. T. DAVIS, Prop. POMONA. CAL.

Brown and White Leghorns

Prize winners at L. A. Show, '06. Eggs from good laying strains. Eggs, special matings, per 15, $2.00. Incubator lots, $6.00 per 100.

Hemet Poultry Yards, Hemet, Cal.

Blue Andalusian Eggs

$1.50 and $2.00 for 15, $7.00 per 100. Free range. I raised and sold cockerel winning first prize at late L. A. poultry show. Stock. ***Mrs. J. S. Duff, 3145 S. Hoover St., Los Angeles, Cal.***

Rhode Island Reds

Fine stock of cockerels and hens for sale. Eggs, $1.50 per setting.

C. E. DAVIS, REDLANDS, CAL.

White Wyandottes

Eggs for hatching from standard bred birds, $1.50 per 13. Hens and Pullets for sale.

A. P. Robinson, 263 Prospect St., near Park, Riverside

Shade's Rhode Island Reds

Automatic Chicken Feeders for Sale.

Shade's Rhode Island Red Farm, San Bernardino, Cal

WILLARD POULTRY FARM, HYNES, CAL.

Mrs. F. T. Hungerford, Manager

INDIAN RUNNER DUCKS

At San Francisco show, 1905, I won 2nd and 3rd on young drake and 1st on young duck, with 3 entries. At the 1906 Los Angeles show, 1st on old drake, 1st and 2nd on young drake, 1st and 2nd on young and old duck and 1st on pen. Eggs—$1 for 13, $3 for 50, $5 for 100. Hens' eggs all ordered up to April 1st.

FOR SIX YEARS

Albers' Black Minorcas

Have led in the shows every year, and they lead all breeds in egg production all the time. Eggs in large or small lots. Stock for sale. Circular free.

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Buy From Our Factory—Save One-Third.

PRACTICAL INCUBATORS positively the best. Hatches more and stronger chicks. 10 YEARS' GUARANTEE

Cat. free. PRACTICAL INC. CO., 720 S. 11th St. San Jose, Cal.

Why do you pay $5.00 to $8.00 per hundred for eggs for hatching when you can get just as good eggs from just as good stock from us at one half that price? Our stock is large and healthy. The hens lay lots of large white eggs that run as high as 98% fertility. We sell eggs in incuator lots only at $2.50 per hundred.

Avenue Poultry Yards, Ventura, Cal.

and after supplying the needs of factories, tanneries, bakeries and other trades, they are becoming a substitute for high-priced meats, besides entering largely into the everyday food of the people. Poultry products have now climbed to a place of more than half a billion dollars—$500,000,000; and so the farmer's hen competes with wheat for precedence."

RICE AS FOOD.

Rice is highly recommended as a staple food; not to be served occasionally as a desert, but as an everyday diet. The rice grain contains a large per cent. of starch, so it can take the place of potatoes. The complaint is made that too much of the nutritious part of the grain is taken off in the milling, but millers say that this is done in the polishing and that there is greater demand for it if thus prepared.

The Japanese are a rice-eating people and during the late war it has been observed that they have great endurance and that their wounds heal quickly. These two observations are strong arguments in favor of rice as a staple food. Experiments show that rice is easily digested. This makes it especially suitable for food for children, or people having weak digestive organs. It is claimed that dyspepsia may be cured by the free use of rice as food. Writers of tokology recommend rice as a food for women during pregnancy. It is not a bone-forming food and experience has shown that much pain and suffering during confinement has been avoided by eating rice freely.

Rice, like potatoes, is not a food of which one easily tires. Since it is a starchy food it combines well with fatty or acid foods and by combinations with them, its flavor may be varied. A dish of boiled rice, served with sugar and cream forms a perfect food for a child. Browned butter may be poured over boiled rice just before serving, or cheese may be served with it. Dried fruits boiled over it form a good combination. Rice and tomatoes served separately at the same meal go well together. Spices, such as nutmeg, cinnamon, curry powder and extracts are used with rice to vary the flavor. Puddings of rice with milk, cream and egg for a complete food. With such a variety of combinations, rice may be sevred commonly without becoming tiresome.

Curry balls are nice to serve with chicken. Boil half a cup of rice until soft, then add the yolk of two eggs, half teaspoonful salt, one teaspoonful curry powder, one teaspoonful grated onion, mix well together. When partially cooked make it up into balls about the size of hickory nuts; roll them in the slightly beaten whites of two eggs; then roll in fine bread crumbs or flour. Fry in deep, hot fat until brown, or else brown them in butter.

A double boiler is the best utensil for cooking rice, as it will thus take care of itself without fear of burning. Then, too, since it does not then need to be stirred but slightly, the grains are not broken to pieces—it comes out in separated grains and not in a mush.

It is a curious fact that a boy's hair grows one-half slower than a girl's. In boys the average rate of growth is three feet three inches in six years, being an average of 0.018 inches a day. During the twenty-first and twenty-fourth years a man's hair grows quicker than at any other period. It takes an eyelash twenty weeks to reach a length of 0.429 inches, and then its life is from 100 to 150 days. By means of a camera the wink of an eyelid has been measured, and it was found that twenty winks can be made in four seconds.

Be sure that your setting hens are free from lice before they hatch; if you do not watch this your chicks will soon begin to droop around and die. This is caused by head lice which can be found on their head and neck. The best remedy to get rid of head lice is to grease your chicks' heads and necks with sweet cream.—Fancier's Gazette.

The Menlo Park Horticultural Society is considering the advisability of holding its spring exhibition at Redwood City.

Standard Bred S. C. White Leghorns

EXTRA LARGE BIRDS AND HEAVY LAYERS. Eggs, $2 per 15; $8 per 100; $60 per 1000 from January until July only.

CAPTAIN MITCHELL SANTA BARBARA, CAL.

Author of "A Practical Poultry Plant for Southern California," $1.25 cloth binding, on sale by Calif. Cultivator

Dean's Pacific is an Incubator built on scientific plans and has all the latest improvements. Every machine guaranteed. "Facts From Experience" and Catalog for the asking. Address ***Dean's Place, 2509 Central Avenue, Los Angeles.***

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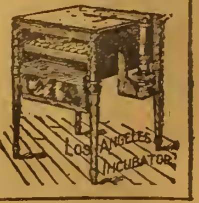

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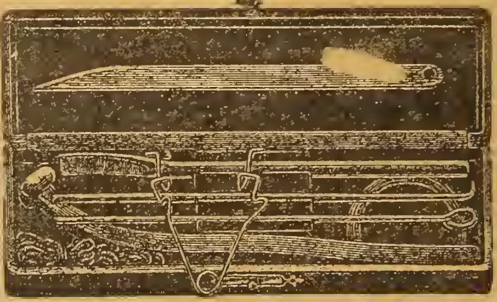

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Double Your Profits by Caponizing.

Complete with Instructions, $2.50, Postpaid

STOCKMEN'S SUPPLY CO.

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MARDEN EGG FARM

HYNES, CALIFORNIA

Breeders of S. C. White Leghorns Exclusively

Fine Feathers alone do not make the profitable hen. Our fowls have the reputation of being ***extra large, handsome*** and ***extra heavy layers.*** Last season, our eggs averaged over 95 per cent. fertile. ***Remember***—In getting eggs from us, you do not get them from the general runs. We have but one grade of eggs to sell for hatching and those are from our breeding pen composed of only the choicest fowls, selected from hundreds that are ***bred to lay.*** Hens that approach the ***200 egg record.***

Price of Eggs—$1.50 per 15, $5 per 100. ***Send for Illustrated Catalogue. Address,***

LEO. W. MARDEN, Manager

LAYING HENS

We have a few choice 1½-year-old Thoroughbred White Leghorn hens, which we are offering at a sacrifice. In order to make room for our young stock we are offering these fowls at $15.00 for 12 hens and 1 rooster or $100 per 100.

We also have a number of 5-months-old pullets, also of the same variety, on which we can name you the same price. If your stock needs renewing, send in your order at once, as they are going fast.

We have a Hatchery of 50,000 chicks per month capacity, from which we are making shipments daily to all parts of the Coast. If you need any just hatched chicks have your order booked at once, so as to get them on the date desired. Our price for just hatched chicks is $7.50 per hundred f. o. b. Petaluma.

We manufacture the famous MUST HATCH INCUBATORS AND BROODERS and a complete line of poultry supplies of every description. We cater to the best hatching egg trade on the Coast.

Before purchasing write for our new illustrated Catalogue B, which contains descriptions, prices, etc., of all our goods.

Must Hatch Incubator Co.- Petaluma, Cal.

HUMOR OF HORTICULTURE

I've rubbed elbows with that interesting personage known officially as the "Ornamental Horticulturist," or as one of my more learned and editorial friends would have dubbed him, the "Ornamentative Horticulturist." A few years ago he was, I suppose,, the artist who made striped elephants with a fluffy tail and planted them on the lawn, who made butterflies and ships, birds and beasts, biped and quadruped, who had wheels in his head and got rid of them by expressing himself in wonderful convolutions, rings eccentric and concentric, all in plants that outrivaled Joseph's wonderful coat of many colors. The pity of it is for one of the business ends of horticulture that his tribe did not keep on increasing.

I am reminded of a story in connection with that branch of gardening. An itinerant disciple of the "art that doth mend nature" was called in to lay out some beds on a modest lawn. His "art" had not risen above a round, square and star-shaped bed, so when his whilom employer expressed a desire to supplement them with an oval bed he looked embarrassed; he was not quite sure what an oval bed was. It was explained to him that it was egg-shaped, and he understood. When the owner came around the following day and looked at the oval he was disappointed; it was overweighted at one end. He reproached the "artist" concerning it, and a great light broke in upon him when he was told by him: "Sure, sir, you told me to make it egg-shaped; and isn't an egg bigger at one end than the the other?" There is some humor even in horticulture.

A prospective purchaser went into one of the seed shops not a thousand miles from here, where garden and farm implements were displayed, and asked a young clerk if he sold whiffletrees. He was gravely informed that they did not keep them there, but he would inquire of the nursery department. Another purchaser, who was giving an order and soliciting advice from a clerk as to quantities of seed wanted for certain number of plants, finally ordered a pound of raffia. The clerk, thinking he was ordering too much of it, gravely asked him how many plants of it he wantetd to raise. A tree agent some years ago astonished the home office with the quantities of tree paeonias he was selling. Upon investigation it developed that he was recommending them as shade trees, which had in the summer the wonderful flowers shown in the picture book which he carried. There are incidents connected with the business end of horticulture and they do much to relieve the tedium of the day and hour.

An acquaintance of mine in the trade once sagely remarked in my hearing that in his opinion any fool could grow good plants, but that it required a man of great wisdom to sell them. It looked to him as if he had discovered the business end for certain. I may remark parenthetically that the gentleman referred to was a grand and gloomy failure in both departments; he is a fair sample of the know-it-all. There is a story told to the effect that a young man who was ambitions to succeed in business once obtained the ear of the late Commodore Vanderbilt and sought his advice. He is reported to have asked him if the secret of success in business was knowledge, or was it some fortunate inspiration? The gruff old Commodore tersely replied: "No, my young friend; not inspiration; perspiraation, sir, perspiration." And it may be truly said that if the business joint of horticulture is anywhere in particular, it is at the elbow, and it should be well greased.—P.O'Mara.

USE FOR OLD NEWSPAPERS.

A combination of printer's ink and paper has many uses as a patent medicine possibly being taken externally as well as internally.

If one is of a thrifty disposition, the accumulation of daily newspapers in the house is a constant thorn in the flesh and finally the garbage collector is subsidized to remove this inoffensive little article. But a goodly pile of papers is a handy thing to have in the house, while the kitchen work is considerably lightened if they are habitually used.

One use is to always spread papers upon the table before preparing a meal at the completion of which they can be easily removed and there is no necessity of scrubbing. A paper wiped over grease spilled on the stove will save an extra blackening, while nothing is better than newspaper to impart the final high polish to windows and mirrors. They may be also used in packing china and glassware, not forgetting that if woolen goods are wrapped in newspaper that the pesky little moth will fight shy of that particular package. Many a case of pneumonia might be avoided if several thicknesses of paper were laid over the chest and across the back before venturing out of doors in cold weather, while layers of the same thing will take the place of weather strips if Jack Frost catches us unawares and our tenderest plants may rest secure under the same protecting wing.

In the sick room a pad of newspapers is a great protection to the bedding and a great saving to the laundress. These may be made as thick as desired, covered on the upper side with a layer of cheap cotton wadding and held in place by a covering of a piece of old sheeting tacked loosely with strong threads.

"'Tis the mony mickles that make the muckle." A daily paper seems after morning perusal the very acme of "has-beens" but try saving them, and if you do not find numerous uses for it why twist it up in a hard knot when the kitchen fire is out, and lighting a match to it start a fire that will boil sufficient water to make your cup of five o'clock tea.—Mary M. Cross.

On the farm a pound of poultry meat can be grown at less cost than a pound of beef.

Buff and Black Orpingtons
Buff and Brown Leghorns
Indian Runner Ducks—Bronze Turkeys
Eggs and Young Stock in Season
W. W. Bliss - Duarte, Cal.

Single Comb Brown Leghorns
Exclusively
Stock for sale and eggs for hatching. Eggs from first pen $2.00 per 15 eggs, second pen $1.50 per 15. Incubator lots for $6.00 per 100 eggs. They have always won first prize whenever shown. Large birds and heavy layers.
W. E. Mercer - - Ventura, Cal.

A POULTRY COLONY
NEAR LOS ANGELES
Is at present being formed for the purpose of mutual benefit. Situation unexcelled; plenty of good water, splendid soil and close to town. For particulars apply to
Anna L. Pinkerton
Realty Trust Company, 129 So. Broadway, Los Angeles, Cal.

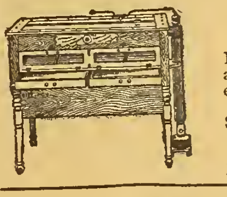
WHITE WYANDOTTES
200-250 Egg Fowls **16 Prizes San Francisco**
Scored by T. E. Orr, eminent Eastern judge, our birds swept the deck at San Francisco.
Unequalled on the Coast as layers and exhibition fowls.
Settings and Incubator Lots; Pens and Cockerels for sale.
Beautifully Illustrated Circular Free.
Capitol Avenue Poultry Farm
A. L. R. Mantz
Rural 21, Box 98K San Jose, Cal.

White Wyandotte Eggs
For hatching. Pure Dustin & Hallack strain. From 1st Pen, $3.50 per setting, 2nd pen, $2.50.
Mrs. S. H. Church, 505 S. Main St.. Los Angeles

Fairview Poultry Yards
SILVER LACED WYANDOTTES
Two pens, both headed by prize-winning cockerels; 1st at Los Angeles and 1st at San Diego. Four prize-winning females in pens. Eggs, $1.50 per 15.
WHITE PLYMOUTH ROCKS
Special mating, pen headed by Fairview Prince, a son of the best layer in our yards, $1.50 per 15. Five pens large MATURE hens mated to vigorous Cockerels, $1 per 15 eggs; $5 per 100. Eggs from these pens specially recommended for incubator hatching.
A. E. NELSON, EL MONTE, CAL.

Golden Crest Poultry Yards
White Leghorns—Eggs, 50c per setting, from pens of Petaluma's best laying strain. $3.00 per 100.
Barred Rocks—75c per setting.
Prize winning **White Crested Black Polish** my specialty.
Geo. H. Randall
C St., Santa Ana

THE FEATHERLEY FARM ORPINGTONS
Over 30 prizes, specials and cups in **Buff, Black and White Orpingtons** on 27 entries this year at San Francisco, San Diego and Los Angeles. Bred for utility and egg purposes, as well as prize winning qualities. Eggs from $2 to $3 a setting. Write for free mating list, describing my ten prize yards.
P. L. Harley, Box C, Redlands, Cal.



The Stockton Incubator
Is now manufactured under new management and is in every way put up as a first-class machine. Our 1906 model is a perfect working incubator, economical to run and gives a fine hatch.
Winner of silver medal at Pan-American, also medal at California State Fair. Write for circular and information.
Stockton Incubator Co.
Marshall & Barnes, Props. **Stockton, Cal.**

Emery's Pure Meat Meal
Don't believe all we say, but just enough to buy our Poultry Foods
Ask your nearest dealer for them and take no imitations
Emery's "B. B. & B."
THE PACIFIC GUANO & FERTILIZER CO. Successors to N. Ohlandt & Co **San Francisco, Cal.**

EGGS
Barred Rocks, White and Brown Leghorns, $5.00 to $6.00 per 100, $1.25 to $1.50 per 15. White Wyandottes, $7.00 to $8 00 per 100, $1.25 to $2.00 per 15. Reds, Orpingtons and White Rocks, $6 00 to $7.00 per 100, $1.25 to $1.50 per 15. Other kinds, prices on application. You can buy cheaper eggs than we sell, but are they good? Are they guaranteed? Ours are. **Sole Agents Standard Cyphers Incubators.**
Kloninger Bros. **838 S. Main St.** **Los Angeles**

Excelsior Dry Chick Food
Will raise 98 per cent of your chicks. **Price, $3.50 per 100 lb.**
—Excelsior Egg Food—
Will make your hens lay eggs. **Price, $2.00.**
Our assertions have been proven by those that use them. The live articles will do all we claim. All we claim is **results.** Results produce Chicks and Eggs. Chicks and Eggs produce **cash.** Cash is what you raise Chicks and Eggs for. Are we right? We will prove it if you use them.
Del Monte Milling Co.
242 Central Avenue - - Los Angeles, Cal.

Chamberlain's Perfect Chick Feed

"Nothing Just as Good"

World's Chick Feed of To-Day. The only original **Dry Chick Feed.** All others are worthless imitations. **Chamberlain's Perfect Chick Feed** was used exclusively at the great St. Louis World's Fair during the 7 months. This the highest compliment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.

"Nothing Just as Good"

CHAMBERLAIN'S PERFECT MASH EGG FEED,
THE WORLD'S GREATEST EGG PRODUCER.
GERMAIN SEED CO.,
Pacific Coast Agents. **LOS ANGELES, CALA,**
SPECIAL PRICES ON TON LOTS.
Distributing Agents: FREDERICK BROWN, San Jose; CHAS. H. NEARPASS, San Diego; CHANNEL COMMERCIAL CO., Santa Barbara and Ventura.

Veterinary

BY DR. W. J. OLIVER,
318 East Second St., Los Angeles

To the end that this department may be made as valuable to the subscribers as possible, we ask observance of the following: Be sure to state in full the history of the case, location of the disease and the conditions under which the animal has been kept just before and since the disease appeared. Give your name and address, which will not appear in the paper if you so request. No charge whatever is made for such questions as are answered through the colums of the Cultivator, but when an immediate mail answer is wished Dr. Oliver asks an additional fee of $1.00 and will give immediate attention and reply by mail. In such case write Dr. W. J. Oliver, 318 E. Second St., Los Angeles, Cal.

Questions should be in by Monday to be answered in the following Friday's paper.

CHRONIC COUGH.

Editor Cultivator: I have a seven year old horse that had the distemper two years ago, and has had a cough nearly ever since, especially in winter when he takes cold he is worse. Last winter he run at the nose considerably. I doctored for that, and he has very little now. but he coughs about as last winter and seems to cough up mucus from the throat which flies out of the mouth when drinking. His neck is somewhat stiff and drinks from a bucket setting on the ground with difficulty. I am giving him Kendals powders (pulv. gentain and pulv. sulphate of iron) and will follow that with a plaster along the wind pipe as he directs. This part is explanatory and the following is what I would like to know about also. The horse while standing is constantly resting one or the other of his fore legs by resting his toe on the ground and having his knee bent forward, shifting from one to the other occasionally. What makee him do that? And what can I do for it? And what more or bettre can I do for the cough, stiff neck, or treatment as explained in the first part of this inquiry. Any suggestion on any phase of the case will be kindly and thankfully received.—I. N. D., Porterville.

The cough is of chronic form, caused by thickening of the mucus membrane of the larynx and some derangement in the recurrent nerve and affects the horse more when eating or drinking or when first brought out of the stable. This cough is hard to cure in chronic stage. Smith's Glyo. Hereoine given according to directions, 1 oz. three times a day, will do the most good. The resting of one or other of the fore legs is caused from stiffness in shoulder muscles, probably rheumatic. Rub in a little liniment, equal parts of equa ammonia, turpentine and oil once a day.

SHAVING EVERY DAY

Shaving is a job that has to be done over and over. It's a mighty ticklish job to keep the face in shape if the razor and the hand and the soap are not just right. The soap is about as important as anything. It's easy to get and hold a bad case of sore face by using the soaps that are used to wash soiled clothes. It's taking grave chances, and no excuse for it either. William's Shaving Soap, made only for shaving, costs very little. It's so much safer and it makes shaving so much easier. Anybody can get a sample free by writing the J. B. Williams Company, Glastonbury, Conn., where they make it.

GOOD WORDS

It pleases the Cultivator to give good results to advertisers although at times we lose their business temporarily. It paid them once—and they will come back.

Tropico, Cal., March 8, 1906.
California Cultivator:

Gentlemen:—Having disposed of all my plants you will please take my ad out of the paper and send me bill to date, including a year's subscription to your paper. I have received very satisfactory results from the advertisement placed in the Cultivator and shall be glad to make use of it in the future. Your, truly,

D. GRISWOLD.

Whitier. Cal., March 8, 1906.
California Cultivator:

Gentlemen:—Please discontinue my advertisement in your paper as I am all sold out. Yours truly.

A. R. RIDEOUT.

ACETYLENE FOR LIGHTING PURPOSES

The conveniences of the city, which are coming more and more to the country home, enhance the pleasures of country life until it is now the aspiration of professional as well as business men to have a small place in the country where many advantages are greater than those of the city, and but few of the discomforts and annoyances which the city has are to be found.

The trolley, phone, and acetylene gas for lighting and cooking purposes are becoming more and more common and thus supplying the comforts and pleasures of home life to the country folk which have so long been needed.

There are several acetylene generators for producing acetylene gas for lighting and cooking, but one of the best of these which we have ever seen or heard of, is made by the Superior Light and Heat Company of Los Angeles. It was the pleasure of the writer to be taken through this plant located at 151-153 N. Clarence Street, and it is indeed the most complete factory for the manufacture of the machines that could well be conceived and the whole character of the place as well as the business is indicative of positive and responsible work and results.

The gas manufactured by this effective machine is claimed to be superior to ordinary gas or electricity for lighting and cooking besides an additional advantage in that the gas is not poisonous to persons nor plants as ordinary gas is.

The advantages of this system of lighting are many besides those mentioned, and the Superior Light and Heat Company will be glad to answer any questions or give any further information to any one who will drop them a line or call at their new factory.

Irrigation

IRRIGATION ..BY ..GASOLINE POWER.

A great deal has been written on the subject of irrigation, usually referring only to the large and extensive plants; but to the average stockman or ranchman, the isolated irrigation power plant is an absolute necessity. The requirements in the way of power and equipments vary according to the conditions. For deep wells, force pumps, and special geared pumping engines having the entire engine equipment connected on skids in as convenient and simple manner as possible, will give better results. Particularly where the walking beam style engine is preferred.

Where the water is to be forced considerable distance to a tank or reservoir, then the force pump operated by a special semi-portable gasoline engine arranged for moving around is used.

Where the water is to be raised from ten to thirty feet and very large quantities are required. the centrifugal pump operated by a stationary or semi-portable gasoline engine, if properly constructed, will raise a large amount of water at small cost.

RECLAMATION WORK.

Under the reclamation act the national government will construct the largest irrigation works in history, far exceeding those of Egypt or India. The reclamation act provides that funds from the sale of certain public lands shall be applied by the government to the building of irrigation works. At the present time this fund amounts to about $28.000.000 and is increasing at the rate of $4,000,000 annually.

This fund is self-continuing. After the irrigation works have been constructed the sum expended by the government in any one work is to be returned to it in ten annual installments by the settlers pro rata. At the first year after any one project has been completed, one-tenth of the original amount expended on that work is to be returned and put into other projects. Fifty million acres of arid land at present totally unfit for agriculture, will be opened to the settler through the huge irrigation works which the government will build under the national irrigation act.

TO TEST WELL.

Editor Cultivator: A new well is being put down, and I am anxious to have it tested to ascertain the quantity of water that may be pumped from it. I have no pump by which to test it; can it be tested correctly by putting in a certain quantity of water, and calculating by the time that it would take to sink to the original water level?—J. R., Santa Paula.

The method as stated above would be of no value. There might be a very porus bottom that would allow the water to escape very rapidly while the supply in the well might be very small It is quite probable that if the supply in the well is strong that the water poured in at the top would be longer in finding the original level than if the supply is weak. There is no way of determining what a well will furnish except to put on a pump and run it a few days. Wells usually increase their flow after pumping some time.

UNCLE SAM'S IRRIGATION.

Millions of arid land in the west will be thrown open to the farmer through irrigation and the huge projects which the government has on hand under the national irrigation act, will, it is claimed by the most enthusiastic irrigation experts, open the way for the mightiest Anglo-Saxon civilization the world has ever witnessed.

Among these great works undertaken by the government is the Shoshone project in Wyoming, which will irrigate 160.000 acres of public land; the Uncompahgre valley project in Colorado, 10,000; the Belle Fourche project in South Dakota, 85,000 acres; the Salt river project in Arizona, 200,000 acres; the Malheur project in Oregon, 90,000 acres; the Honda river project in New Mexico, 10,000 acres; the Fort Buford project in Montana, 60,000 acres; the North Platte project in Wyoming and Nebraska, 300,000 acres; the Mindoka project in Idaho, 130,000 acres; the Yuma project in Arizona and California, 115.000 acres; the Truckee-Carson project in Nevada, 350.000 acres; the Klamath project in California, 2,000,000 acres.

Besides the projects enumerated, which total no less than 3.600,000 acres, the engineers of the reclamation service are preparing plans on a great many other projects which will be undertaken as rapidly as the fund expands and is returned to begin the work.

A PLAN FOR SUB-IRRIGATION.

A. Hemmant says in the Denver Field and Farm: I have a very small irrigation plant raising water from a well by wind power, using part of the water for surface irrigation and part for sub-irrigation. For sub-irrigation I use three-inch tile laid fourteen to sixteen inches below the surface in rows five and one-half feet apart, the rows connected by a head row in which is laid one T joint for each lateral row. The rows must be absolutely level, not following the inequalities of the surface in order that the low places shall not get more water than the higher ones and the ends of the rows must be closed with brick or some other stone, so that moles, rats or other vermin can not get in.

A square box set in the ground at one end of the head row gives access to it and from thence to all other rows and it should have a wire netting over the top to keep out trash as well as vermin. The top of the box should be raised above the surface of the ground enough to keep out storm water, as by that means mud and trash would be carried in and fill up the tilings. The tile is porus and the uncemented joints allow the water to pass through freely.

This mode of irrigation has several points to recommend it above others: First—One can turn on the water and not have to watch it. Second—The ground does not begin to bake in a few minutes after the water is stopped as in the case with cultivated ground under surface irrigation. Third—Most of the moisture being several inches below the surface the rootlets go down instead of spreading out near the top of the ground as in surface irrigation where they are likely to be burned by the hot sun and torn by the cultivator.

Auction Sale!

—On Donohue Ranch—

1 Block East of Latin on Long Beach Electric line, 1 bl'k West of Florence on Shorb Avenue, at 10 a. m.

Tuesday Mar. 20

70 Choice Milch Cows—
Holsteins, Jerseys and Durhams, fresh and coming in soon. Large milkers and in good condition.
5 Yearling Heifers, 2 Work Horses
1 Driving Horse, 1 3-yr-old Colt.

Implements—1 milk wagon, good as new; 1 one-horse wagon: 1 late improved distillate boiler for steaming cans; milk cans; Stantions for 50 cows, harness, etc. Terms—8 months time with note and approved security.

On account of sub-dividing my ranch, I am closing out my entire diary and will absolutely sell to the highest bidder without reserve.

FREE LUNCH AT NOON

J. F. DONOHUE, Owner.

Rhoades, Reed & Rhoades, Auct.
Office 730 South Spring St.

The Sure-Go
Gasoline Engine

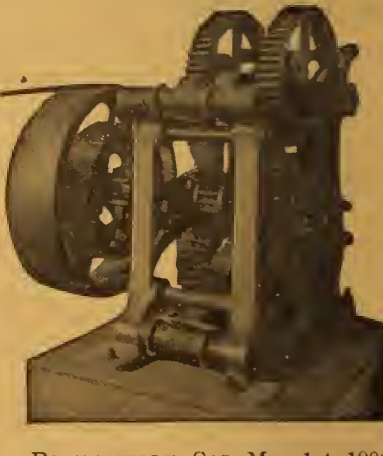
Is the proper one to buy to secure the best possible make for the least possible money. For any kind of work, pumping water, grinding feed, shelling corn. sawing wood, or anything else that requires a good steady power.

Our prices are the lowest and our engine the very best. For a better description please turn to your last number of the Cultivator.

Aldritt & Weaver
Sole Agents for the Pacific Coast
115 N. Broadway Los Angeles

OPIUM and Whiskey Habits cured at home without pain. Book of particulars sent FREE. B. M. Woolley, M.D., Atlanta, Ga., 103 N. Pryor St.

The Pomona Pump



PORTERVILLE, CAL. Mar. 1st, 1906
The Pomona Manufacturing Company of Pomona California installed a deep well pump for me last October consisting of a No 28 head and 10 inch cylinder placed ninety two feet below the surface. It lifts fifty five inches of water from seventy five feet or more below the ground and forces it through a pipe line one half mile long sixty five feet above the pump. It has been run for four months and has been using about twenty six horse power for the whole plant.

The pump has run without any delay or repairs of any kind and is satisfactory in every respect.

CHARLES BOYDSTON.

The above Pump was installed where the owner had been using a Centrifugal Pump and had been paying for 41 Electric Horse power and obtained less than 50 inches of water, making a difference of 15 horse power, saved by the Pomona Pump, or a saving of $750 per year for power alone.

We have saved this for Mr. Boydston. We may be able to do it for you.

POMONA MFG. CO.

Queries and Replies

Editor Cultivator: where can I get the Homemaker?—Mrs. F. E. S. Merced.

Write to Washington, D. C.

TOMATO CULTURE

Editor Cultivator.—I am extremely anxious to learn all about tomato raising. I have Prof. Wickson's two books, but the subject of tomatoes is not full treated. If you know of any literature on the subject I will thank you much for information as to where how to obtain it. Stamps inclosed for reply. R. L. H., Chula Vista.
ply. R. L. H., Chula Vista.

Nothing better than Wickson has been published on the tomato except certain newspaper articles by practical growers. Can you not find some successful grower to whom you can apply for advice?

HOME ORCHARD.

Editor Cultivator—Please give a list of desirable fruit trees, vines, etc., for light friable soils in the coastal region of Los Angeles or Orange counties. E. J. C., Los Angeles.

Peaches—Yellow St. John, Tewkins Honey, Large Early York, Coolege's Favorite, Lovell, Belle of Georgia, Salway.

Pears—Bartlett, Seckel, Winter Nelis and St. Andre.

Nectarines—Lord Napier and Victoria.

Apricots.—Newcastle, Hemskirke, and Royal.

Plums,—Wickson. Kelsey, Sultan and Bartlett for Japanese Wayland and Will Goose for American varieties. Rivers' Early Prolific and Tragedy for European family.

Prunes.—Prune de Agen.

Figs.—Angelique and White Dalatto for White; Negro Fargo for Black.

Lemons and other citrus.—Villa Franca lemon and W. Navel, Valencia, St. Michael, Tangerine (Daisy) and King oranges.

Quince.—Smyrna.

Grapes, European and Eastern—Muscat, Muscatelle fino, Verdal, Chaselar Rose, Damascus, Cipro Nero, Cinsant. Blue Portuguese and Olivette. Any other recommendations except berries, Eastern grapes, Concord, Niagara Agawam..

Persimmons—Hayachea, (spelled about twenty different ways) and any of the chocolate-colored flesh varieties.

Pomegranates.—Sweet Spanish or Spanish Ruby.

BORDEAUX MIXTURE

Editor Cultivator—How shall I mix Bordeaux for peach curl and other fungus troubles, one that will fertilize and invigorate the trees as I understand it often does. H. R. M., Santa Ana.

It is a little late to use bluestone for most trees, still we re-publish it to help the few in need.

5 ℔s copper sulphate (bluestone).
5 ℔s quicklime.
50 gallons water.

Dissolve the copper sulphate (bluestone) in a barrel containing 25 gallons of water. Slack the quicklime and then add sufficient water to make 25 gallons of milk of lime. Until the two solutions by pouring one pailful of each at the same time into a third barrel. The milk of lime should be well stirred while being dipped from the barrel and should be passed through a fine wire screen when poured into the mixing barrel, but the copper solution should not be passed through the screen. Stir the mixture thoroughly at first and also occasionally when being applied as a spray to the trees.

In the preparation of the Bordeaux mixture it is necessary that the ingredients should be mixed in a wooden vessel. If an iron vat is used for dissolving the copper, it will go to the iron and the effect of the spray is largely neutralized. After it is prepared the mixture may be applied to the trees from the usual galvanized iron spray tank. Apply the remedy cold and as soon after it is prepared as possible. Never allow it to stand over night.

The above spray is a fertilizer and invigorator of the tree and will effectually prevent curl leaf if applied very thoroughly from one to three weeks before the buds open. This remedy can be applied with safety until the buds finally burst into full bloom.

Of bluestone only the best quality should be used. There is a good deal of variation in bluestone, as it contains always more or less iron sulphate or copperas, but this is readily discernible and a sample that contains any considerable amount of rust color copperas should not be used.

Climate and Crops

General Summary.—The weather was pleasant and warmer than usual during the first five days of the week throughout California. Saturday and Sunday were in marked contrast to the beginning of the week. The most violent storm of the year prevailed at the time this bulletin went to press. Througout the Great Valley and along the entire coast high southerly winds, changing to equally high northwest winds have occurred. Heavy snow is falling in the Sierra Nevada and light snow in the Coast Range. Snow will probably fall in the Sierra Madre. A thunderstorm is reported at Los Angeles.

Heavy rains are reported in the northern counties including an inch in twenty-four hours at many places. The rainfall has also been heavy along the southern coast.

The other noticeable feature of the weather during the week was the exremely warm spell in the section south of the Tehachapi, Thursday and Friday afternoons. Temperatures reached as high as 86° at many points, in the afternoon.

Sacramento Valley—Warm, pleasant weather prevailed until Saturday, when the skies became cloudy and northeast winds set in. The winds increased in force and by Monday morning were blowing at the rate of 30 miles per hour. The snowfall has been heavy in the Sierra, but there was no cold weather of any consequence. Warm weather on Thursday and Friday caused a moderate melting of the snow and a fair run-off. At the close of the week there was still more than twelve feet of snow reported at Summit and this amount will be added to by the present storm.

* * *

Coast and Bay Sections.—The weather was clear, warm and pleasant during most of the week. Light easterly winds prevailed in the mornings and moderate westerly winds at night. Sunday was cloudy, with occasional squalls, and Sunday night and Monday morning stormy. High southerly winds were reported at all points on Sunday night and Monday morning. Velocities exceeding 60 miles an hour were recorded in Marin county. There were no frosts during the week. Rain fell in scattered showers Sunday and a heavy rain early Monday morning. Temperatures exceeding 70 degrees occurred on Wednesday, Thursday. Friday and Saturday.

* * *

San Joaquin Valley.—Clear, warm weather prevailed until Sunday, when cloudy, unsettled conditions occurred. Afternoon temperatures ranged from 74° to 76°. The seasonal rainfall at Fresno is approaching a fair average. There is considerable snow in the mountains and the present storm will add materially to this. The winds were for the most part light and from the north, until Saturday night, when fresh, southerly breezes began. High south winds were blowing at the close of the week.

* * *

Southern California.—Settled weather prevailed in all counties south of the Tehachapi until Saturday. It was very warm early in the week, with temperatures ranging from 80° to 86° in the afternoon, or from 12 to 16 degrees above the normal. The close of the week was marked by high southerly winds, generous rain and occasional thunder squalls. The wind at San Diego reached a velocity of 36 miles per hour from the northeast Monday morning. The seasonal rainfall at Los Angeles is now in excess of that of the preceding season. The rainfall during the present season has been not only generous, but remarkably well distributed.

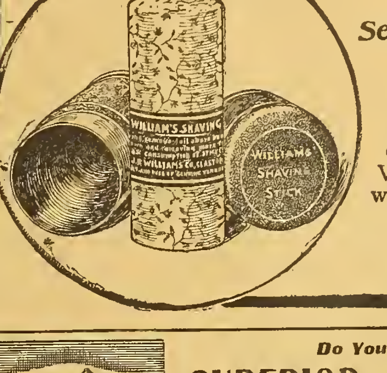
Williams' Shaving Soap

Suppose your dealer *does* make a few extra pennies by recommending an inferior shaving soap! What good does that do you? It is your face that suffers — not the dealer. Insist upon Williams'.

Send 4c. in stamps for a Williams' Shaving Stick, (Trial Size.)
(Enough for 50 shaves.)

Williams' Barbers' Bar, Yankee, Mug, Quick & Easy Shaving Soaps and Williams' Shaving Sticks.—Sold everywhere. Address,

THE J. B. WILLIAMS COMPANY,
Dept. A, Glastonbury, Conn.



Do You Want the Best Light on Earth?

SUPERIOR ACETYLENE GENERATORS
FURNISH IT

No Smoke — No Odor — Fully guaranteed. Write to-day for calalogue.

SUPERIOR LIGHT AND HEAT CO.
151-53 North Clarence St. Los Angeles

WITH A SIEVERT OIL BURNER

You can burn 100,000 cubic feet of air with every 130 gallons of oil, this means perfect combustion. To burn more than 100,000 cubic feet of air with 130 gallons of oil, there is a decided loss of heat. To burn less than 100,000 cubic feet of air there is a loss of fuel. The only safe and reliable burner on the market. Send for full particulars.

SIEVERT OIL BURNER CO. 1005 N. Alameda St. Los Angeles, Cal.

Strawberry Guavas 3 years old, 2 to 3 feet, high, very straight. Balled and sacked and in most excellent condition. Price packed F. O. B. $20 per 100

TIM CARROLL, Anaheim, California.

Good Soil **LAND** Water Plenty

—IN—

KINGS RIVER DELTA

IS NOT AN EXPERIMENT.

Thousands of acres already sold—Thousands of acres more

TO SELL

On the Famous

Laguna-De-Tache-Grant

Where everything grows.

We are offering a new Subdivision at **$40 per Acre**

With Water from Kings River at 62½ cents per acre. Terms one-fourth cash, balance in eight yearly payments. We have made over 675 sales from this Grant so far and over 3,000 people are living on the land sold. That ought to be good evidence of the merits of the place. Don't you think it would be a good plan to look it up before buying elsewhere?

Low Price

Call or write for Descriptive Circular
NARES & SAUNDERS
135 So. Broadway, Los Angeles

Terms Easy

When writing to Advertisers Please mention Cultivator

Household Department

LITTLE HELPS BY THE WAY.

Smile once in a while,
  'Twill make your heart seem lighter;
  'Twill make your pathway brighter.
Life's a mirror—as we smile,
  Smiles come back to greet us;
If we're frowning all the while,
  Frowns forever meet us.
—Nixon Waterman in the "Merry Mood.'

FAMILY SCRAP.

A Kansas poet has given the public the following:

The farmer sows his crop,
  His good wife sews his clothes.
The farmer darns the winds,
  And his good wife darns his hose.
The farmer pitches in the hay,
  But should he cross her whim,
The good wife lays aside her work
  and pitches into him.

"GIVE US THIS DAY OUR DAILY BREAD"

The art of bread-making is one of the highest accomplishments a woman can attain. No young woman is fit for a wife who has not learned to bake bread. More diseases of the stomach come from bad bread than from almost any other cause. It produces dyspepsia and dyspepsia aggravates a hundred other complaints. Half the human race suffers constant misery from the daily bread it eats, It would be a boon were it cut out of our bill of fare. But were it always sweet wholesome and well baked, life can longer be maintained on it than on any other single article of diet.

"Give us this day our daily bread," but give it to us in nature's best form, light, sweet and pure.

Laura Linton writes about bread, that it is one of the earliest, most generally used and most important forms of food adopted by mankind. With good bread the plainest meal is a feast in itself. Without it the most elaborately prepared menu is unsatisfactory. Bread making is at once the easiest and most difficult branch of culinary sciences—easy if the elementary principles are mastered and followed, difficult if there be any neglect to use proper care and materials. It should be regarded as one of the brightest accomplishments, and if a fraction of the time and thought which are expended upon fancy cooking were devoted to this most important article of food, the sale of remedies for digestive ailments would be appreciably decreased.

As bread is used in every household almost every day in the year its food value is of interest to us. Life could be sustained indefinitely upon bread alone, but the body would not be properly nourished. Fine wheat flour contains about seventy-five per cent starch and about ten per cent nitrogenous matter, but is quite deficient in fat. Bread and butter make an almost perfect food, forming a fairly well "balanced ration."

"Of all the cereals, wheat yields the best flour for bread making. This is due to the fact that it is the only grain which contains the constituent, gluten, in the proper proportion, and of the desired quality, essential to making light, spongy bread. When the starch is washed out of a quantity of flour the gluten will remain as a greyish-yellow, tough, elastic substance, which can be drawn out into threads. It is the most valuable part of the wheat, being the proteid, or flesh-former.

The greater part of the wheat grain is starch. That part of the starch lying nearest the bran cells contains the most gulten. As this part of the starch is hard and closely attached to the bran, much of it is lost in the manufacture of our white flour. A great quantity of the mineral matter—that which goes to form bones and sustain the nerves—is also carried off in the bran. Those who advocate the use of whole wheat flour, maintain that because of these losses our wheat flour has degenerated into a lifeless and unsatisfactory food.

While it is true that whole wheat is richer in some valuable constituents than white flour, and that in the system of some persons it has a most beneficial effect, it does not necessarily follow that bread made from it furnishes more nourishment than white bread. Whole wheat flour contains bran, and bran is composed largely of cellulose. Cellulose is practically indigestible to the human system. A certain amount of it in our food is a necessity, but taken in this form it is not only undigested itself, but owing to its thick coatings its protects from the action of the digestive juices a large proportion of the nutriments contained in the flour. It also acts as a mechanical irritant and is hurried along the digestive tract too quickly for complete assimilation to take place. From practical tests it has been found that white bread furnishes more energy than an equal weight of whole-wheat bread.

Good flour should be creamywhite in color, should not pack easy, and when squeezed in the hand should not fall apart when the hand is opened. It should have a grainy feeling rather than a velvety touch. Velvety flour contains more moisture and lacks the body of the hard flour. When eight or nine months old, flour is usually at its best. It should be kept in a dry, cool place as it readily absorbs moisture, the gluten looses its tendency and the bread is coarser and heavier. Flour is almost as sensitive to odors as milk, consequently should be kept in a pure atmosphere.

Liquid yeasts made at home seem to be the most generally used and for bread that will keep well will have a clean, sweet taste in the mouth, and yield the most in bulk from a given amount of flour. There is nothing equal to a perfect home-made yeast bread. We add yeast to the flour in order to make a bread that will be light and spongy. Any fluid will penetrate more quickly through a sponge than through putty, and the digestive fluids are no exception to this rule. Bread made with a mixture of flour and water and baked at once would be close and dry and difficult to masticate and digest. Good bread should be of light, spongy texture that the greatest possible amount of surface is presented to the action of the digestive juices. To obtain these qualities we should expand the dough as much as possible without destroying the sweetness. The process by which the expansion is brought about, due to the yeast is one of fermentation.

Yeast is a tiny plant, one of the simplest forms of vegetable organisms in existence. In order to grow it requires a fair degree of warmth, moisture and starch or sugar to feed upon. When placed in the flour, to which some warm liquid has been added, it finds all the conditions necessary for growth and begins at once to reproduce. It buds off in every direction and multiplies into many millions to the cubic inch. It feeds upon the starch, changing some of it into sugar and the sugar into alcohol and carbonic acid gas. This gas, because of the warmth, expands and being lighter than the dough, rises and in its efforts to escape expands the elastic mass. Right here is seen the importance of the gluten. If it were not present the gas would readily break through the walls of the bubbles it forms and escape, and the bread would fall, but because it is present the walls of the bubbles are tough and elastic, will expand without breaking and keep the gas confined to the dough.

We may take it as a general principle that the slower any fermentation takes place the more desirable the product, and this principle applies to bread making. On the farm as a rule, it seems more convenient to set the bread over night, and bread made in this manner is better than bread made in a few hours. It may neither look better nor taste better, but it is more wholesome. Some of the constituents of the flour are made by the action of the yeast partially digested. This is a slow process and in rapidly made bread has not time to take place properly.

"Milk will make a whiter and more nourishing bread than water. Water bread will keep moist longer. The addition of a small amount of shortening will make bread tender. Butter is the most wholesome; lard will make whiter bread. Separate pans for each loaf are advisable, the loaves are better shaped, more evenly cooked and more wholesome. The sweet nutty crust of the bread is partially digested in the process of baking. When taken from the pans the bread should be set where the air can circulate freely around it. An old window screen with cleats on the ends makes an excellent bread cooler."

A common remedy, which has proved effective in poison oak or ivy, is ordinary lard with sufficent prepared chalk rubbed into it to make a thick paste. Apply often, rubbing it well into the poisoned surface. Said never to fail of curing.

Squirrels.—Experiments in Nevada to determine the best method of exterminating these pests proved that Strychnine was the most satisfactory.

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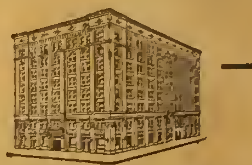

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To accommodate the large number of people who keep money at home, or in a local bank where it is earning little or no interest, this bank receives deposits by mail on exactly the same terms as though made in person.

Four per cent baid on Term Deposits. Write for booklet "A" on banking by mail—Tells how it's done.

Security Savings Bank
Fourth and Spring Sts.
Los Angeles, California.

First Annual
Clearance Sale
An Innovation for This Store

On account of a change in the management in this store we offer this great clearance sale in order to thoroughly clean up our stock and dispose of every odd piece and broken line.

15% to 50% Reductions

have been made on every article in our entire establishment, which makes this the greatest furniture sale ever conducted in this city. Never in the history of Los Angeles have such liberal discounts on strictly first-class furniture been offered you.

If You Have Furniture to Buy, Buy it Now

The sale will continue during this month but we advise you to make a early purchase and take advantage of the great bargains now offered you

Goods purchased at this sale will be delivered at the convenience of our customers.

Niles Pease
Furniture Co.

Free Delivery with our own teams to all of the nearby towns.

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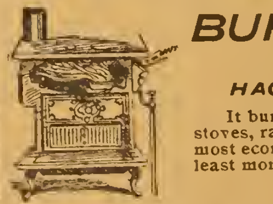

BURN AIR AND SAVE FUEL
You can do it with the
HAGUE IMPROVED DOMESTIC OIL BURNER
It burns more air than any other burner on the market. Can be fitted to stoves, ranges, furnaces, and all kinds of heating systems. Simplest and most economical burner on the market. If you want the most heat for th least money, write for information to
Hague Domestic Oil Burner Co, 810 So. Spring St., Los Angeles, Cal.

20 MULE TEAM BRAND
PURE POWDERED BORAX-BORAX SOAP and HYGIENIC BORAX COMPOUNDS
PACIFIC COAST BORAX COMPANY
San Francisco Chicago New York

Borax is well known as the world's greatest cleanser and most harmless antiseptic. 20 MULE TEAM WHITE BORAX SOAP is the only real Borax Soap on the market. It makes washing easy, makes clothes and dishes hygienically clean, leaves the hands soft and white. ☞ **Send for free sample** to PACIFIC COAST BORAX COMPANY, 114 Sansome Street, San Francisco, California.

ORDERLY HOUSEKEEPING

If a woman is to succeed as a house keeper she must cultivate order from the first. She must make her work a pleasant pastime. Have a place for everything and see that everything is kept in its place. Retiring early at night and rising early in the morning places the housekeeper in advance during the day. Before baking or cooking, much time is saved by having the material on hand and proper utensils to work with. A very helpful system is to time yourself while doing your work. Buy a good article and it will prove to be the cheapest in the end. For eating it will taste better, for wearing it will last longer and look better, and for your house you will take more care of a good article than a poor one. As a rule we do not find a systematic housekeeper in one who is absent from her duties five days out of six, particularly a woman who manages her own house and home and does her own work. Washing early in the week, Monday if a fine day, gives a good start for the week. Then iron and bake on Tuesday. Wednesday is a very good day for cake baking. Go over the house with the carpet sweeper and dust up, wipe off kitchen floor on Thursday, sewing or mending, shopping, visiting or calling. On Friday thoroughly sweep and dust the main part of the house, wash windows, clean cupboards and silver, order in groceries for Saturday morning. On Saturday have a general clearing up and preparing for the Sabbath. Some women have the vague idea that housekeeping is not so ennobling as to be a fine musician or painter or needle worker. Stop nad think if the happiest homes are not where the best housekeeping is done. Housekeeper, feel that you are occupying one of the highest professions on earth and doing as much good in the world and fulfilling the mission that God has given you, as the best temperance lecturer. In fact, if home duties were a little more properly cared for, there would not be so many unhappy homes to-day. Let us aim at making our homes more attractive and pleasant.

Much satisfaction is derived from keeping a daily account of your expenditures and often avoids disputes with merchants. Be moderate in your dress. If you cannot afford all the home comforts and dress too, do without the dress. It is well to have some knowledge of dressmaking and tailoring. One often gets more wear from a made over article than when new. Be a fond, loving mother, but do not spoil your children by not teaching them how to be good housekeepers, modest and obedient.

Systematic housekeeping is one long life-time experience, learning something new every day and keeping in practice the knowledge you have gained in the past. The better way would be to take one subject at a time and thoroughly discuss it. For instance, house-cleaning is one of the important duties of today. Having some experience in that line, I do not favor upsetting the whole of the house at once, but prefer taking one room at a time, commencing at the attic and ending at cellar or back kitchen.—Mrs. A. Beck.

THE CARE OF FINE SHOES

Shoes will wear much longer if they are properly cared for and it is easily done when one knows how.

A little vaseline rubbed on the shoes occasionally makes the leather soft and prevents cracking. Let the shoes stand a while to absorb the vaseline and then rub them well with a woolen cloth.

One of the best liquid dressings for shoes may be made at home with very little expense. By the aid of heat dissolve two ounces of borax and four ounces of gum shellac in a quart of hot water. Some time is necessary for this. Strain through a cloth and while still hot, dissolve two packages of Diamond slate dye in the liquid. Let cool and bottle for use. Apply to the shoes with a swab or sponge or cloth the same as other shoe dressings. Half of the quantity may be made if desired, but as it takes no more work to make the whole at once, and the dressing keeps perfectly, we prefer to use these quantities.

Cookery Recipes

FRENCH PANCAKES

Use any good pancake batter, except buckwheat, and bake in small, round, thin pancakes. Spread with jelly or jam, roll up, sprinkle with powdered sugar, and serve hot.

APPLE COBBLER

Peel and core eight medium-sized apples. Arrange in a baking dish, and fill the cores with sugar. Make a batter with three cupfuls of milk, three ounces of flour and four eggs, well beaten. Pour over the apples, and bake until the fruit is done. Serve with any preferred pudding sauce.

CHOCOLATE PUDDING.

Half a pound of stale bread crumbs and milk to make a smooth paste when boiled. Add a heaping tablespoonful of cocoa, sugar to taste, and a few drops of vanilla. Take from the fire, and add three eggs, beaten separately, first the yelks and then the whites whipped to a stiff froth. Put into a buttered pudding-dish and bake carefully. Serve with cream, either whipped or plain.

FRUIT PUDDING.

One cupful of milk and one cupful of canned fruit juice. Add two tablespoonfuls of powdered sugar. and bring to a boil. Remove from the fire and stir in quickly the well-beaten yelks of four eggs. Butter a pudding dish, and put in a large cupful of canned fruit. Beat the whites of the egg to a stiff froth, stir into the custard, pour over fruit, and bake half an hour. —Modern Women.

DRY CLEANED BLANKETS.

A writer in the household attacks the idea of dry cleaned blankets in the following manner

The idea of dry cleaned blankets no longer holds good and we women who go in for health and hygiene have them washed and then dried in the open air and sun. Germ life exists for many months in the fleecy surface of woolen goods, hence it is not safe to dry clean woolens. I will give you my dear old colored laundress' method of washing blankets, and she certainly kept the blankets soft and clean. She selects a bright, clear, sunny day to wash them, as it is very necessary that both washing and drying process be hurried along as quickly as possible. If the blankets are heavy and large two persons can do the work better than one. Fill a tub full of rain water, warm, but not hot, and make a good suds using white soap and add two tablespoonfuls of Pearline into the suds to hasten the work. Rub gently, putting one blanket in at a time, never use a washboard but rub with the hands until all soil is gone. Send them through a second suds of the same temperature as the first, then rinse and send through a rubber wringer if you have one. Put a little borax in the rinsing water and have it warm. Dry quickly in the sun. When thoroughly dry, fold smoothly and place them under a weight a day or two. then they are ready for use and like a new blanket.

EXTRAVAGANCE

Bill—"Say, John who's the most extravagant person you know?"

John.—That's easy. It's my wife, Sallie."

Bill—"No. It's Tom Allen. He blowed in a hundred dollars this spring just for nothing."

John—"You're jokin'. Sure Tom never spent a cent foolishly in his life."

Bill—"Well, there he comes now and I'll leave it to you. See that horse he's driving. That's that six year old mare I sold him this spring for $250., and she was worth it but he let her get bad shoulders and she ran right down till now you, nor me, nor no one else wouldn't offer more than $150.00 for her, and if that isn't extravagant to knock a hundred dollars off the value of a mare when 25 cents for a box of Security Gall Cure would have saved it, then I don't know what extravagance is."

Many a man thinks he is in love when he merely has fatty degeneration of the heart.—Pacific Monthly.

THE MARK AND THE MOTTO

"The Recollection of Quality
Remains Long After
The Price is Forgotten"

Trade Mark Registered.

E.C. SIMMONS KEEN KUTTER TRADE ST. LOUIS MO. MARK

The difference in *worth* between a good tool and a poor one is always more than the difference in *cost.* Counting the time wasted in constant sharpening and the short life of inferior tools, a poor tool is really more expensive than a good one.

Whenever you need a tool of any kind, it will pay you to buy the Keen Kutter brand, and have the best. All kinds of tools are made under this name, and every kind represents the very highest quality of material, workmanship and finish.

KEEN KUTTER

tools have been the standard of America for 36 years and are the only complete line of tools ever to receive an award at a great exposition—the Keen Kutter line being awarded the Grand Prize at the St. Louis Fair.

Following are some of the kinds of tools made under the Keen Kutter Brand: Axes, Adzes, Hammers, Hatchets, Chisels, Screw Drivers, Auger Bits, Files, Planes, Draw Knives, Saws, Tool Cabinets, Scythes, Hay Knives, Grass Hooks, Brush Hooks, Corn Knives, Trowels, Pruning Shears, Tinners' Snips, Scissors, Eye Hoes, Shears, Hair Clippers, Horse Shears, Razors, etc., and knives of all kinds.

If your dealer does not keep Keen Kutter Tools write us and learn where to get them. Send for Tool Booklet.

SIMMONS HARDWARE COMPANY,
St. Louis,
New York.

COLONIST RATES TO CALIFORNIA

Santa Fe

Will be in effect every day, Feb. 15 to April 7, and Sept. 15 to Oct. 31, 1906, from all points in the east and south.

Following are a few:

Chicago	$33.00	Kansas City & Leavenworth	$25.00
St. Louis	30.00	St. Joseph & Atchison	25.00
Galveston	26.45	Council Bluffs & Omaha	25.00
Dallas, Houston and Fort Worth			25.00
Nearly all points in Kansas, Oklahoma and Indian Territory			25.00

Colonist rates are also in effect from all points east of Chicago and south of the Ohio river.

Santa Fe Agents in California will take deposits of money to cover price of tickets, which will be promptly furnished to passengers at any point from which these rates are in effect.

California illustrated literature mailed free to any address or may be had from Santa Fe representatives.

Tourist Sleeping Car Lines

Colonist tickets are honored in tourist sleeping cars which run via the Santa Fe to Los Angeles and San Francisco.

Choice of

MANY ROUTES

East and West

SOUTHERN PACIFIC

SUNSET Via New Orleans and El Paso

OGDEN Via San Francisco

SHASTA Via Portland

Pullman Vestibuled Trains Daily. Personally Conducted Tourist Excursions via all routes every day in the week at Reduced Rates. The SOUTHERN PACIFIC gives you choice of many routes from the northern boundary of the United States to the Atlantic Coast, so that you may go one way and return another, with varied scenery and climatic conditions.

Full information at 261 S. Spring St., Los Angeles, or from any agent

SOUTHERN PACIFIC

"GOPHER DEATH"
Kills Gophers, Squirrels, rodents 1500 tablets in box. 1 tablet kills a gopher, Price $1.25.
"RATICIDE"
Kills Rats and Mice. Price 25c. Ask your druggist for either, or send price, and we will forward free of charge. Send for sample or circular. FORT DODGE CHEMICAL COMPANY, 303 California Street, San Francisco
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Sinaloa Is "Profitland."

Rich lands at less than $2 per acre in Sinaloa, Mexico. Better farming conditions than in California. Great rivers, railroads and seaports. Country rapidly developing. Opportunities for the capitalist and the man of moderate means.
Call or write for details.

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217-220 Conservative Ins. Bldg. Los Angeles, Cal.

MARK THE BABY'S GRAVE
Headstones - $4 Up
Monuments - $11 Up
Blue or White Marble nicely lettered. Instructions for setting. Save agent's commissions. *Send for Catalogue.*
W. J. MOORE, 581 3d St., Sterling, Ill.

VULCANITE
ROOFING

JUST THE THING ALL THE YEAR ROUND

Non-conductive of heat and cold. Does not buckle—lays perfectly smooth. A material which is at once light, strong, durable and cheap, and at the same time water-proof, wind-proof, acid and fume-proof. Also used for covering outside of buildings, floors of warehouses, offices. etc. Requires no paint; is permanent and inexpensive. Comes in various weights.
Samples and price list upon application.

C. SCHEERER & CO.
255 S. LOS ANGELES ST.
LOS ANGELES, CAL.

The Produce Markets

Los Angeles Markets.

Los Angeles, March 15, 1906.

Trading at the produce market yesterday was of increased volume as result of the clearer weather, but the improvement was hardly up to expectations. and with supplies equal to requirements, prices were without important fluctuations.

Receipts of local ranch eggs were the largest of the season yesterday. showing a total of 807 cases. There was considerable doubt among the eggs jobbers as to whether the total receipt of 807 cases were all strictly ranch offerings; the rumor circulated being to the effect that over 400 of the cases received were more than likely a carload of eastern storage that might have stolen in unannounced. The market was quoted firm at 19c.

Butter arrived in heavy shipments, also. showing a total of 27,115 lbs. The general undertone was steady, without any changes in the quotations.

Receipts of vegetables were extremely light on account of the rain.

Followin~ are the jobbing prices in the Los Angeles market.

Butter.

B. of T. Creamery, per roll	.55
Valley Creamery, fancy	.55
Valley Storage	.52½

Cheese.

Cal. 3-lb. hand	.17½
Cal. Young America	.16½
California Anchor	.15½
Northern	.16@17
Domestic Swiss	.19@20
Imported do	.26½@27

Eggs.

Eggs, Fresh Ranch	.19

Poultry.

Fryers, 2 1-2 lbs	.18@20
Broilers, under 2 lbs., per lb	.19@22
Young Roosters, per lb.	.16@19
Hens, per lb	.16
Ducks, per lb.	.14@15
Geese	.14@15
Turkeys	.19

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock:

Hogs, 200 lbs.	.6
Prime Steers	.4½
Cows	.3¼
Calves, per lb	.5
Sheep, ewes, per head	.4.50
Wethers	.5.00

Potatoes.

Northern, per sack	.1.65@1.75
Locals, per cwt	.1.10@1.25
Locals, new, per box	.2.25
Sweets, white, per cwt	.2.40@2.50
Sweets, yellow, cwt.	.2.00

Vegetables.

Onions, Aust. Brown, cwt.	.1.50@1.75
Onions, yellow, cwt.	.1.75
Garlic	.7@10
Cabbage, per sack	.35@50
Cauliflower, per doz.	.40@60
Asparagus	.10@12½
Lettuce, per doz.	.15@25
Bell Peppers	.15
Chili, Green	.20
Cucumbers, per doz.	.60@2.50
Radishes, per doz.	.'20@30
Lima Beans	.10@15
String eBans	.15@17
Beets	.40
Green Onions, doz. bunches	.20@25
Carrots, doz. bunches	.40
Turnips, doz. bunches	.30@40
Celery, per doz.	.35@40
Peas, per lb.	.4@4½
Egg Plant	.8@10
Tomatoes, local	.2.50@4.00
Parsley, per. doz. bunches	.60
Hubbard Squash, per lb.	.1½

Citrus Fruits.

Lemons, standard	.75@1.00
Lemons, choice	.1.00@1.25
Lemons, fancy	.1.75@1.85
Grapefruit	.1.75@3.00
Navels, extra fancy	.2.25@2.50
Navels, choice	.1.40@1.60

Fresh Fruits.

Apples, Bellefleur	.1.75@1.85
Fall Pippins	.2.25@2.50
Red Pearmain	.1.00@1.25
Strawberries, per box	.15@20
Guavas, per basket	.4@8
Pear, Winter Nellis, per lb.	.5@6

Dried Fruit.

Apples, evaporated, ex ch, 9; ch, 8½.

Apricots, ex ch, 11; fy, 8½; ch, 7½.

Peaches, fy, 8½@10½; ch, 7½@8.

Santa Clara Prunes, 30-40, 8c, 40-50, 7; 50-60, 6c; 60-70, 5½.

Loose Muscatel Raisins, 2-crown 4½; 3-crown, 5; 4-crown, 6.

Beans, Dried.

Limas	.5.00@5.50
Pinks, fancy	.2.50@2.65
Lady Washington	.3.00@3.10
Small White	.3.50@3.75
Black Eyes	.5.50@6.00

Nuts.

Walnuts, No. 1, soft shell	.14
Do, No. 2	.8@10
Do. No. 1, hard shells	.12
Do. No. 2, hard shells	.10
Almonds, paper shells,	.16@17
Almonds, soft shell	.14
Peanuts, California	.6@7½

Honey.

Honey, comb frames	.14½@15
White, strained, per lb.	.6½@7
Light Amber	.6
Amber	5
Beeswax	.27

Hay.

Barley, No. 1	.14.00@16.00
Alfalfa, local	.13.00@14.00
Alfalfa, Northern	.12.50
Wheat, No. 1	.16.00
Tame Oat	.12.00@20.00

Grain.

Selling prices of mill stuffs f. o. b. cars L. A., in quantity, are:

Rolled Barley	.1.40
Bran	.1.25
Feed Corn Meal	.1.45
Shorts	.1.45
Wheat, per cwt	.1.60
Cracked Corn	.1.40
Oil Cake Meal	.2.25
Cocoanut Meal	.1.55

San Francisco Markets.

San Francisco. March 14, 1906.

Butter.

Butter prices remain the same as for a week past.

Fresh California extras	.26
Fresh California, firsts	.25
Fresh California, seconds	.24
Eastern extras	.20

Cheese.

California, new	.14
California firsts	.13
California seconds	.12
Eastern Cheddars	.16
Storage, California	.14
Storage, Eastern	.15

Eggs.

Eggs attracted but little interest, selected selling in a moderate way at a slight advance.

Eggs, fresh ranch	.19
Firsts	.17½
Storage, Eastern	.14

Poultry.

Old Roosters, per doz.	.4.50@5.50
Young Roosters, per doz.	.6.00@7.50
Hens, per doz.	.5.00@7.50
Ducks, per doz.	.5.00@7.00
Turkeys, per lb.	.15@17
Geese, per pair,	.2.00@2.50

Live Stock.

There is no abatement to the firmness in values for live stock, the general market holding a strong position in favor of sellers under continued light supplies. Trading is strictly in accordasce with absolute needs, the high prices causing operators to exaccordance with absolute needs, the ercise extreme caution in making purchases.

Hogs, per lb., 80 to 130 lbs.	.7
Hogs, per lb., to 250 lbs.	.7¼
Hogs. pr lb., 250 to 350 lbs.	.6¾
Hogs, per lb., rough heavy	.5
Prime Steers, lb	.8
Cows, per lb.	.6½
Calves, lb.	.5@5½
Sheep, ewes, per lb.	.4½@5
Lambs, per lb	.5@7
Wethers, per lb.	.5@5½

Potatoes.

River Burbanks	.40@75
Oregon Burbanks	.75@1.20
Salinas Burbanks	.1.00@1.50
Sweets, Merced	.75@1.25

Vegetables.

Asparagus	.6
Rhubarb, per box	.65@1.25
Onions, Oregon, per sack	.1.00@1.50
Onions, Australian	.3.50
Bell Peppers, green	.25
Cucumbers, per doz.	.75@1.00
Tomatoes, per box	.1.25@1.75
String Beans	.15
Wax Beans	$..15
Summer Squash, per box	.2.00
Green Peas, per lb.	.7@10

Citrus Fruits.

Navels, fancy	.2.50@3.50
Seedlings	.1.50@1.75
Lemons, standard	.1.00@3.00
Grapefruit	.1.50@2.75
Tangerines	.1.50@1.75

Fresh Fruits.

Apples were in light supply and firm at the old standard of values.

Apples, per box, extra	.1.75@2.00
Apples, fancy	.$1.25@1.50

Beans, Dried.

Limas	.4.75
Pinks	.1.90@2.00
Small Whites	.3.15@3.25
Black Eyes	.4.40@4.50
Bayos	.3.40@3.50
Red Kidney	.3.50@3.75
Horse eBans	.1.50@1.75

Hay.

Barley, new	.$8.00@11.00
Alfalfa	.11.00@12.50
Wheat	.11.00@16.00
Oats	.8.50@12.50

Protect The Hens
To Raise Fine Birds
You must first of all provide comfortable quarters.
Profitable Egg Getting...
success in poultry business demands it. It is not necessary to invest a fortune in your poultry house. It is not necessary to build a heavy expensive poultry house.
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Rubber Sanded Roofing
It Makes a Light Structure—solid, strong and absolutely weather-proof. That wear-proof surface of hard flint sand means years and years of extra wear without additional cost. Send for samples and prices
Our complete Roofing Guide "D" will tell you about every class of Roofing and Building Paper for every purpose. Send for it to-day.
PIONEER ROLL PAPER CO.
Los Angeles, California.

Grain.

Wheat	1.27@1.30
Barley	1.20
Corn, California. New Large	1.50@1.55
Oats	1.50@1.70
Rye	1.45@1.52
Rolled Barley, per ton	25.00@26.00
Bran, per ton,	19.50@20.50
Feed Corn Meal, per ton	20.50@30.50
Middlings .. ½	26@30
Cracked Corn, per ton	28.50
Oil Cake Meal, per ton	37.00
Cocoanut Cake, per ton	23.00

Hops.

The price of desirable grades is nominal at 8@12½ per lb., according to quality.

CITRUS MARKETS

Below we give, as in the past, the reported Eastern sales of California citrus fruit, for the last day before going to press. Those interested in general market conditions for the past week or ten days will find a perusal of this week's citrus page most profitable. The general market conditions remain, as for several weeks past, first class, and all Eastern cities show an increasing demand for our citrus fruits, the consumption in New York City far surpassing that of any previous year.

NEW YORK, March 13.—Thirty-four cars were sold at auction today The market is declining. The weather is favorable.

NAVELS (Ventilated.)

	Averages.
White C., st, Covina Ex	$2.15
Riverside, Riverside Ex	'2.20
Riverside, Riverside Ex	2.35
Red C., xc, Covina Fruit Ex	2.45
Red Mountain, xc, Riverside Ex	2.55
Violet, ch, Duarte-Monrovia Ex	2.60
Red Globe, xc, Riverside Ex	2.65
La Mesa, xf, Riverside Ex	2.80
Blue Globe. xf, Riverside Ex	2.90
Del Monte	1.75
Buscade, ch, Hasson Bros	1.95
Albion, ch, Thos. Strain	2.00
Caledonia, st, Thos. Strain	2.25
Peacock, xc, Whortley & Strong	2.05
Peacock, xc, Whortley & Strong	2.20
Calif Beauty xf Whortley & Strong	2.30
Blue Star, ch, Worthley & Strong	2.55
Magnolia, xf. Worthley & Strong	2.70
Tiger head, xc, I. L. Lyon & Son	2.10
Pyramid xc G. R. Hand & Co.,	2.15
La Verne Home xc La V C A	2.25
La Verne Beauties, fy La Verne Citrus Association	2.35
Montclare, fy, CCU, Claremont	2.55
Oakmont, xc, CCU, Claremont	2.50
Vista, ch, CCU Claremont	2.15
Trophy, xf, CCU E. Highland	2.70
Geranium, xc CCU E. Highland	2.50
West Highland xc Cleghorn & Co	2.45
West Highland xc Cleghorn & Co	2.60
West Highland xc Cleghorn & Co	2.60
West Highland fy Cleghorn & Co	2.70
West Highland fy Cleghorn & Co	2.80
Corona Lily	2.45
Mission Bells xc A. B. Chapman	2.50
Sunshine Grove ch J. F. Bowen	2.55
Santa Fe st Moffatt Frt Co.	2.55
Mountain ch Moffatt Frt Co	2.70
Fountain ch Moffatt Frt Co	2.75
Golden Harvest xf, Rubidoux Frt. Co	2.55
Cloister, xf Rubidoux Fruit Co	2.85
Laurel, xf, Call Fruit Co	2.60
Criterion xc Penn Frt Co	2.60
Criterion, xc Penn Frt Co	2.70
Criterion xc Penn Frt Co	2.70
Cosmos xc West Highland Cit Assn	2.65
"Strictly Fancy" Brand	2.65
Producer, fy Redl Or Producer	2.70
Mt Harrison, xc F. L. Sewell	2.70
Mt Harrison xf F. L. Sewell	2.85
Lion Head xf I. L. Lyon & Son	2.70
Mizpah xf Redl Or Producers	2.80
Orchard or, National Or Co	3.00

NAVELS (Iced.)

Flower fy F. P. Corson	2.50

THOMPSON IMPROVED NAVEL

Columbian ch Rubidoux Frt Co	2.00
Golden Harvest xf Rubi. F Co	2.50
Cloister xf Rubidoux Frt Co.	2.75
Orchard or National Or Co	3.15
Orchard or National Or Co	3.20

TANGERINES

Blue Globe xf Riverside Ex	1.35
Lion Head xf I L Lyon & Son	2.50
Orchard or National Or Co	2.50
Stalk	1.90
Independent fy Highland	1.95
Flower fy F. P. Corson	2.10

LEMONS

Squirrel fy A H Fruit Co	3.10
Setter	2.95
West Highland xc Cleghorn & Co	3.05
West Highland fy Cleghorn & Co	3.25
Orchard or National Or Co	3.25

SEEDLINGS

Mission Bells xc A B Chapman	2.20
Stalk	1.95

Foreign Lemon Sales

NEW YORK, March 13.—Twelve thousand boxes of Cicily lemons were sold today. The stock was only fair. The market is 40c a box lower. The next sale will be held on Thursday, when 16,000 boxes will be offered.

Fancy 300s brought	$2.65@3.00
Choice 300s brought	2.15@2.70
Fancy 360s brought	3.45@3.60
Choice 360s brought	3.25@3.40

Boston Market

BOSTON MARCH 13.—Twenty-four cars sold at auction yesterday. The market is lower. The weather is favorable.

NAVELS (Ventilated).

	Averages.
Urchin st Semi-Tropic Ex	$2.50
Royal xc Queen Colony Ex	2.80
Tunnel ch Semi-Tropic Ex	2.85
Quail xc O C Ex	2.85
Bear xf O C Exchange	2.90
Greyhound ch San Antonio Ex	2.90
San Fernando Rey fy S T Ex	2.90
Quail xc O C Exchange	2.95
Queen Bee xf Queen Colony Ex	2.95
Volunteer xc San Antonio Ex	2.95
Gold Buckle xf R H Exchange	3.15
Clover xc Redl Or Gro Assn	3.00
Pine Cone xf Highl Or Gro Assn	2.95
Calif Beauty xf Worthley & Strong	2.50
Blue Stra ch Worthley & Strong	2.30
Sunflower xf CCU Dedlands	3.10
Partridge xc CCU Upland	2.85
Old Baldy ch CCU Upland	2.75
Sunflower xf CCU East Highland	3.00
Avery ch	2.60
Avery fy	2.75
Red Keystone ch King Frt Co	2.75
Blue Keystone fy King Frt Co	2.90
Keiser fy	2.75
Cyril. ch J. S. Kuns Frt Co	2.75
Geisha fy J. S. Kuns Frt Co	2.80
Monogram fy	2.90
Monrovia Heights or Monrovia Heights Co	2.75
Morris or	2.80
No Name ch H. Little	2.80
Maple, or	2.80
Success, or F. H. Speich & Co	2.80
Valle Vista fy Hemet District	2.85
Ruth fy Rubidoux Frt Co	2.85
No name, fy, H. Little	2.90

NAVELS (ICED)

Butterfly, ch, Covina Frt Ex	2.65

SEEDLINGS

Mission Bells, xc A B Chapman	2.45

BLOODS (WHOLE BOXES)

Tiger, fy S B C F Ex	2.40

BLOODS (HALF BOXES)

Bear, xf. O.-C. Exchange	1.30

GRAPE FRUIT

Royal, xc, Queen Colony Ex	3.45
Blue Star, ch. Worthley & Strong	2.90

TANGERINES

Indian Hill fy San Antonio Ex	2.05
Tiger, fy, S B C Frt Ex	1.95
Quail, xc, O-C Exchange	1.85
Royal, xc, Queen Colony Ex	1.85
Bear, xf, O.-C. Exchange	2.65

Silver Spangled Hamburg's eggs and stock are advertised this week by Arroyo Verde Springs, So. Pasadena, Calif.

The American Steel & Wire Company. Chicago, Ill., are sending free to all farmers and ranchers a copy of their publication "Fence." If interested in any kind of fence write them for a copy, mentioning the Cultivator.

The old established R. F. Wilson Manufacturing Company., of Stockton is again before the Cultivator readers with its talk on windmills and tanks. Mr. Wilson is admirably situated as to securing lumber supplies and can give attractive figures on tanks and mills.

The Sivert Oil Burner Co., finds these busy days with putting in the popular burner. Oil is vastly cheaper than other fuels and the Sievert gets the heat out of oil as few other burners do.

The recent purchase of the G. G. Wickson Dairy supply Houses of the Coast, San Francisco, Los Angeles, and Portland, by the De Laval Separator people brings a new factor into the field, excepting in San Francisco where the De Laval people have been for some time. This enterprising firm is refitting the old Wickson places and will place new stock and be prepared to give better service than ever. The manager of the Los Angeles house is Jas. I. Sedgley.

Willow Brook Farm, of Berlin, Conn., issues a neat booklet on Orpingtons, Buffs, Blacks and Whites. A postal will get it.

The sulphuring time for vines, and spraying time for trees, calls for a place to secure a high grade of sulphur. Cheap sulphur is poor stuff. A good sulphur may be secured from the old reliable San Francisco Sulphur Company., 318 Front street, San Francisco.

IT'S PENNY WISE

Policy to set out a good tree, costing good money and then let the sun burn the bark, or the rabbits gnaw it when for $1.00 an acre you can get Yucca Tree Protectors that are practically indestructible. Write for free sample of the wrap. Yucca Mfg. Co., 2124 Willow St., Los Angeles.

IWANS' POST HOLE AND WELL AUGER

Best earth auger in the world. For Fence and Telphone Post Holes, Wells, etc. Three times the work accomplished with an Iwan Auger than with any other. Makes hole smoothly and quickly; empties easily; is very durable. Us d by U. S. Gov't. 3, 4, 5, 6, 7, 8, 9 and 10 inch, $2.50 each; 12 inch, $6.00; 14 inch, $7.50. Sample at special price to introduce. Agents Wanted. Inquire of dealers or write direct for particulars. IWAN BROS., Box. A Streator, ILL.

CANCER

IN WOMAN'S BREAST
ANY LUMP IS CANCER

Mailed Free—How to Cure Yourself if Cancer is Yet Small—No Pain.

NO PAY UNTIL CURED—GUARANTEE—
JUST SEND YOUR NAME

MRS. E. CROSTHWAITE,
954 Arlington Ave., Oakland, Cal.,
President Golden Gate Woman's Club,

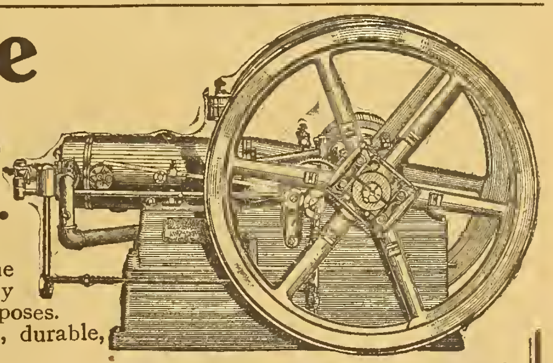
Dear Dr. Chamley—I will state, your medicine cured a very large cancer in my breast 11 inches long, extending to my side and armpit in 14 days over 5 years ago. WRITE AND ASK HER. *Don't doubt, don't delay.*

Mrs. A. L. Bailash, 332 Ohio Street, Vallejo, California, was cured at home of breast cancer; also her mother cured of cancer in both breasts. WRITE TO THEM. E. J. (Lucky) Baldwin, Arcadia, Cal., writes: Dr. Chamley cured a large cancer on my lip and two in my throat after X-Ray and other Doctors had failed. I will give $1000 if I fail to cure any cancer or tumor I treat before it poisons deep. You can't afford to make mistakes with Cancer. Life is surely worth sending your name. 130-page book sent free.

My discovery—a Pacific Island plant extract—has cured thousands of Cancers in from 10 to 20 days, after celebrated physicians and surgeons had declared them "as good as dead."

Address, Dr. and Mrs. Dr. Chamley & Co.,
25 Third Street, San Francisco, Cal.
KINDLY SEND THIS TO SOME ONE WITH CANCER

Gasoline Engines For Irrigating.



THE I. H. C. Gasoline Engines are especially adapted for irrigating purposes.

They will be found safe, durable, simple, and economical.

With maximum power, they can be operated at a minimum expense.

Expert knowledge or previous experience not required to operate them.

They can be attached to any kind of pump in any position, for raising water from deep or shallow wells, reservoirs, canals or running streams.

They excel in **full, regular and long sustained power.**

They can also be used for a general purpose engine for sawing wood, churning, cream separating, feed grinding, etc.

They are unequaled for power of all kinds.

Made in variety of sizes and styles:

Vertical—2, 3, 5 Horse Power.

Horizontal—(Portable and Stationary), **4, 6, 8, 10, 12 or 15 Horse Power.**

An engine of this description, with a suitable pump, makes agriculture a success where it would otherwise be impossible.

Call on local agent and examine these engines or write nearest general agency for illustrated catalog.

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The peer of all with 14 years' record for durability and efficiency.
Cheapest because best.

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IF PUMP YOU MUST
Why not pump at a profit?
Write A. T. Ames, Galt, Cal. for illustrated Catalogue

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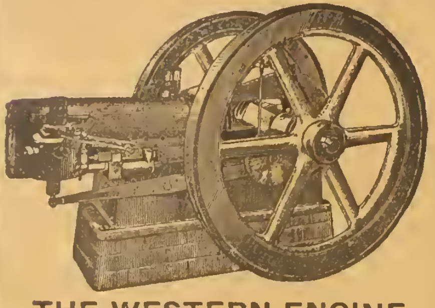

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"From Factory Direct to User"

Designed and built by Western experts for Western use with Western fuel. In construction the Western embodies many original, yet practical ideas, which place it in advance of any other make on the market today. The simplest, strongest and best engine for

Irrigation, Power and Electric Plants.
Any Size from 5 to 500 H. P.

Burns cheapest fuel—gasoline, distillate or crude oil—with a saving of 20 to 40 per cent over any other style. **Send for Illustrated Catalogue** fully describing every detail of construction; tells **how** and **why** the Western excels all others; it gives the facts—the proof. Learn what Western engines are doing for others. Send your name today—ask for latest issue, A6.

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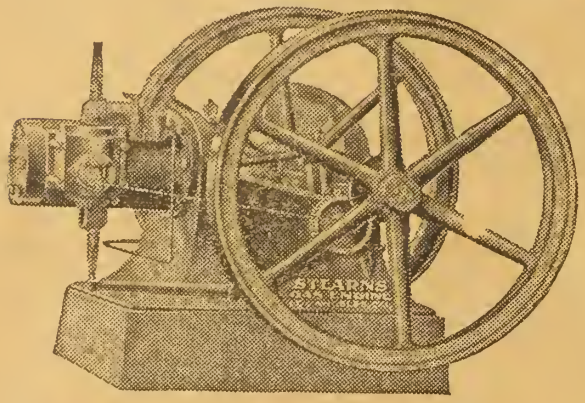

Has many points superior to any other engine.

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Every One Satisfactory

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MADE FROM CALIFORNIA REDWOOD OR SELECTED PUGET SOUND YELLOW FIR **WOOD PIPE** WOODWARD PATENT MACHINE BANDED PIPE
WHEELER PATENT CONTINUOUS STAVE PIPE
BORED WOOD WATER PIPE

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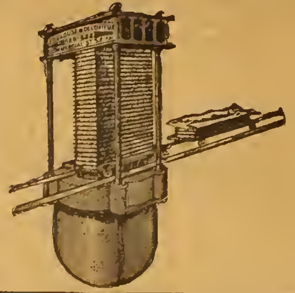

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Complete Plants Fitted Out.

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AN IRRIGATION PUMPING SYSTEM
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All the conditions which make for Profit to the farmer and investor are found in lands in

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And the IMPROVEMENTS being made on the lands of this Company make values certain to increase rapidly.

The character and standing of the management and directorate of this company insure conservative development and eliminate everything of a boom nature from their operations, and are of themselves a gurantee that whatever they engage in has merit.

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The President and large owner in the enterprise is H. J. Whitley, well known through his operations at Hollywood and elsewhere.

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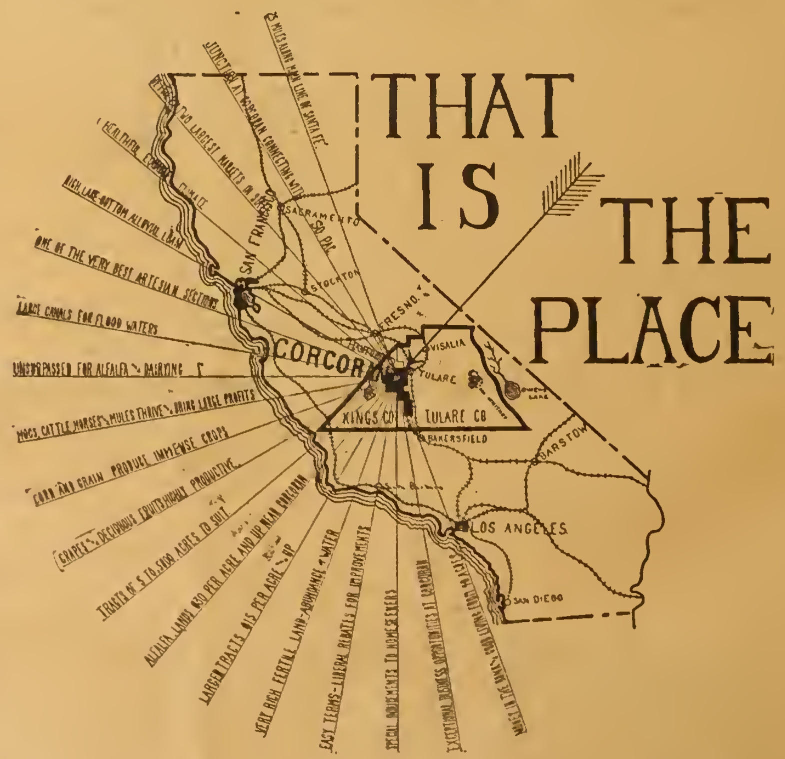
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JUNCTION AT CORCORAN CONNECTING WITH SO. PAC.
TWO LARGEST MARKETS IN STATE
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ONE OF THE VERY BEST ARTESIAN SECTIONS
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Million Dollars

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Exceptional opportunity fo
Harnees Shop Brick Yard
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Billiard Parlor and News Stand
in the town of CORCORAN now being built on our lands.

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200 teams at once to put in crops—preference given to those who will become settlers. Houses and Barns furnished

WANTED

Practical, experienced farmers with teams and implements to rent and care for tracts of 40 to 500 acres. Houses and barns furnished. Plenty of outside work while crops are growing. Liberal terms.

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DEVOTED TO
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IN ALL ITS BRANCHES

LOS ANGELES MARCH 23, 1906 SAN FRANCISCO

Products of Sonoma County, California

The Sonoma County Board of Trade Journal says:

"It may seem a broad assertion, but nevertheless it is true, that Sonoma County, together with her great wine, dairy, stock, and others large industries, produces as much poultry and eggs as all the balance of the State put together.

The annual output of this latter commodity is over $2,000,000 in value. The advantages of the poultry and egg industry in Sonoma Country are its nearness to a reliable market, quick cash returns, and length of season.

A Dairy Herd

Petaluma White Leghorns

BEAN SPRAY
PARIS GREEN
GUARANTEED BY
BEAN SPRAY PUMP CO. SAN JOSE CAL.
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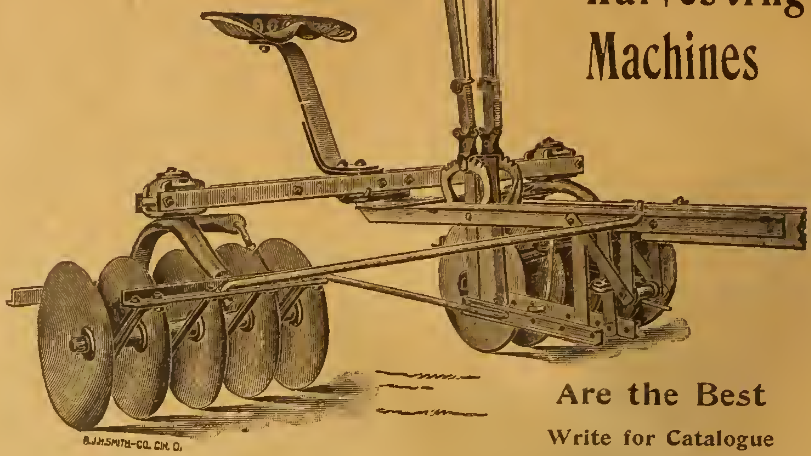
NO BEAN SPRAY PUMPS FOR PARIS GREEN FOR US

Our **Bean Spray Paris Green** is made expressly for spraying purposes. The Government analysis and the above label is on every package. Send for our circular and prices today, stating how much you use, and run no chances of getting an inferior poison.

White Arsenic or Arsenate of Lead if you prefer.

Bean Spray Pump Co.
161 W. Santa Clara St. **San Jose, Cal.**

Osborne Farm Tools And Harvesting Machines



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Are the Best
Write for Catalogue

PACIFIC IMPLEMENT COMPANY
133 to153 Kansas Street San Francisco, Cal.

A Few Remarks About the Care of Chicks

By W. G. Aldrich

Select your eggs from strong, mature matings, as free from contagions as possible. Then incubate as near right as possible, as it is an easy matter to ruin your chicks by improper treatment during this period; don't crowd, or try to improve your machine, but adhere strictly to the instructions.

When your hatch is done, kill all the cripples and drags, as they are no good and are a nuisance to the others. This should be done as you remove the chicks to the brooder.

TEMPERATURE OF BROODER

Most people heat to 90 degrees, but I prefer only 80 to 85 degrees. Then look to the comfort of the little ones, just the same as you would to a child. I start to feed with charcoal and fine grit about 12 to 15 hours after the hatch is done. by throwing it loose in the brooder. Then in about 12 hours more, start with Coulson's Special Dry Ready-Mixed Chick Feed, in a litter of cut straw; keeping clean, fresh water constantly at hand.

Then the first consideration is cleanliness, which is the keynote to the Poultry Industry from "A" to "Z". Old and true is the saying: "Cleanliness is next to Godliness." It certainly is in the chicken business.

CONSIDER THE HEAT

The regulation of heat is the regulation of comfort. Strive to keep the little ones contented. People are apt to overdo the heat, and keep the brooders TOO WARM at night; not so in the daytime, as the chicks are out and in all the time. But at night the birds themselves, maintain the warmth in the brooder, but as soon as they leave the brooder in the morning, it cools off. Then the heat must be turned on early, because if the chicks return to a cold home, they will crowd together, and pile up, in their efforts to get warm. and then look out for trouble. At night turn the blaze of the lamp down real low, just low enough so it don't go out. Then the first thing in the morning when you get up, go out and turn up the blaze, so as to warm up the brooder; so that it will be warm enough to be comfortable for the chicks; say about 85 degrees. By experience one can tell by placing the hand in the brooder, whether it is comfortable for the chicks or not.

In the rainy season I keep my brooders warm all day, even until the birds are quite feathered, but put out the blaze about half past four or five o'clock, before the chicks go to roost at night, so as to let the brooders cool; because if they find it too warm, they will not go in, and in case they do stay outside, they will get too cool. Before morning, they take cold, contract Roup, get sick, and die off, or droop around and make no growth. They must be kept in comfort or they will not do well, and will not thrive as they are expected to do.

ALWAYS GET THE BEST

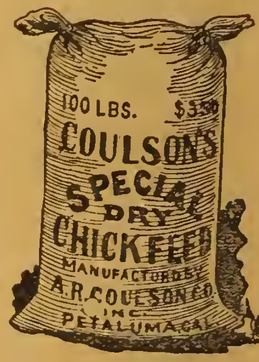
Do not try to be too cheap; get good feed (Coulson's Special Dry Chick Feed), good oil, disinfect often; do not let expense stand before comfort. (A good disinfectant to use is Coulson's Lice Killer, sprayed with an Atomizer Spray Pump.)

No matter how good and strong your little chicks are today, tomorrow may see them off wrong, without any apparent cause, but there is a cause, just the same. Perhaps, worms have attacked them, so give them a little Coulson's Roup Cure in the water, about four to six drops to each quart; start when they are three days old, and continue for three weeks. Along these lines you raise around 75 to 80 per cent of them.

People will find that different lots of chicks will require a little difference in temperature, but strive to keep them comfortable; be sure to keep them clean, and the rest is easy.

MORE REMARKS ABUOT THE FEED

Feed the Coulson's Dry Chick Feed four or five times a day for the first ten days; after they are two weeks old, feed them one meal a day of Coulson's Growing Chick Feed, and three times with some of Coulson's Special. When they get to be two months old, feed Coulson's Growing Chick Feed, by wetting it with milk or water, to make a mash food and feed cracked wheat or whole twice a day. When they are three months old, they can be fed the same as the hens, Coulson's Egg Food, in the morning, and wheat and other grains for the other meals.



One Cent

a chick is all that it costs to feed the chick the first 25 days on Coulson's Special Chick Feed. Ask your dealer for it.

Coulson's Special Chick Feed

Send 10c in Stamps for Our 1906 Catalogue—104 Large Pages—Illustrated Stories of Poultry Success

COULSON POULTRY AND STOCK FOOD CO., PETALUMA, CAL.

CALIFORNIA CULTIVATOR

Vol. XXVI—No. 12 LOS ANGELES, CAL., FRIDAY, MARCH 23, 1906 Subscription $1 a Year

Street Trees--Systematic Planting and Care

By Ernest Braunton

In answer to many requests from individuals and improvement societies, for a comprehensive article on street tree planting, we publish the following valuable treatise on the subject, and trust that those interested will preserve a copy for further reference; it will save you asking questions and remove the necessity for the Cultivator's publishing it piece-meal through-out the year in answer to "Anxious Subscriber."

There are many minor reasons for planting street trees, but the chief or fundamental ones are about four in number, as follows:

1. For ornament; 2nd, for health; 3rd, for comfort; 4th, for protection.

1. Street ornamentation pays didectly in dollars and cents. Beautifying a neighborhood is not a mere fad. It costs but little more to make it attractive than to leave it or make it unsightly, and a well kept, well planted district will not only attract but command residents desirable in every way. It is not mere sentiment that prompts the railroads to advertise the attractions along their lines. Beauty to them represents cash, and each year they spend immense sums calling attention to the attractions of the sections through which they pass. If people choose a line of travel because of its natural and acquired beauties, how much more eagerly will they seek such a place for a residence. That both are eagerly sought for is undisputed. Landscape beauty is capital. Again, not one of us would be satisfied to spend his life in a desert, though surrounded with the necessities of life in plenty. Our natures crave better and more beautiful surroundings, and we oftimes travel far seeking the most beautiful location obtainable.

2. Street trees add greatly to the healthfulness of any district by cooling and purifying the air, the foliage evaporates large quantities of water and the reduction of temperature in this way is greatest during the hottest and dryest weather. The foliage also absorbs impure and therefore harmful gases. Trees also promote circulation air (due principally to unequal temperature.)

3. Street trees add materially to comfort either in city or country, not alone to shade the passer-by, and the idler who rests beneath their branches but in a climate like ours, with perpetual sunshine, they soften the glare and heat of sun on sidewalks.

4. All will concede that street trees afford protection from both wind and sun, but as a protection against fire they are not so well known. The chief of the San Francisco Fire Department states that shade trees in sidewalks are beneficial in checking the spread of fire. First, they are good as windbreaks, keeping sparks and cinders from nearby buildings. Second, they shield the houses, preventing them from catching fire from the heat. He tells of a fire where a single large tree prevented the destruction of a three-story flat adjoining. In this case there was considerable delay in getting water, so that the fire gained great headway.

From a financial point of view, alone, the systematic planting and care of trees on streets would prove a paying investment. Many cases are known where bare land of superior value has sold at a much less price than inferior land with the frontage aligned with street trees. For all purposes but the growing of crops street trees are of more importance and value to the land than quality of soil. New comers are not attracted to a city by garish, shadeless streets any more than they are by dirty or poorly paved streets, unsanitary conditions, or other forms of slovenly civic housekeeping.

Nearly all streets and highways are planted with several sorts of trees to each block, of every conceivable size, form, color and degree of desirability. Such planting looks as irrational as an orchard of all sorts of fruit trees hopelessly mixed—oranges, peaches, walnuts, persimmons, olives and pomegranates, a genuine horticultural museum, planted for the curious only. Prof. Waugh, in his work on landscape gardening says such street planting reminds him of nine monstrously different buttons down the front of a Prince Albert coat.

"Gardening in California" says: "There is one feature in the planting of street trees that calls for special attention. This is the reprehensible practice of planting a jumble of sorts upon the same block. Not only is the effect as a whole bad. but the individual beauty of each is lost in the kaleidoscopic shifting of form and color, that only serves to confuse and bewilder the passer-by.

Very little can be done toward uniform planting without zealous and well directed co-operation on the part of all interested. There must be unity and intelligence of plan, and the work should be carried on by farmers' clubs and improvement associations, those necessary organizations which "do not presume to tell the community how it should spend its money, but only how it may get, with efficiency, the greatest amount of sightliness for its money."

It is of the highest importance that that a plan be outlined on which people of diverse tastes and interest can either agree or effect a compromise. It will not be impossible to find a tree which all may finally adopt, for the vast majority of people desire above all things that their neighborhood should be attractive, and will yield somewhat in their opinion in order to obtain desirable results. We must learn to sacrifice some things in order to get others of different tastes to co-operate with us. It is best, perhaps, after a thorough discussion of the merits of the different trees, to put the matter of selection of one for each street to a vote and let the majority rule, not forgetting that this is a matter which concerns the general public more than the individual.

In incorporated cities the best solution of the matter lies in the adoption of a street tree ordinance. This measure is one of compulsory street planting whereby all streets in the city must be fully planted within two years. It is left with the council or trustees to choose an official tree for each street, but the property owners have the right of petition in the matter, and the tree desired by the majority has invariably been designated as the official tree. Every street must choose its tree within six months after the passage of the ordinance and if not planted accordingly within two years, the city does the work and charges the expense against the property, along with the city taxes. Only in this way may all non-resident owners be made to respond. The results have been highly satisfactory, exceeding all expectations. This ordinance does not require removal of existing trees.

The most common mistake made is the lack of preparation. All holes, no matter in what soil or what the size of the tree, should be dug from 3 to 4 feet deep and of the same diameter. Fill this hole with the best soil to be had, putting the very best at the bottom, below the roots. The tree finding better feed below than above will develop a deep root system and we will not then find so many dying trees nor so many heaved and broken sidewalks.

When buying stock get free-rooted and vigorous trees, not stunted ones. Better plant a thrifty one six inches high, than one as many feet whose roots have been confined for two or three years in a pot or can. Usually too many trees to each lot are planted. Two trees on a 50 foot lot are plenty, and one would be better.

Some sections have found it desirable to have deciduous trees and the argument in their favor consists of the fact that they allow a maximum of sunshine in winter and give abundant protection from it during the summer. But in California we can always get plenty of sunshine and unless the location is such that too much mud or dampness will be produced, I prefer evergreens.

"Evergreen" is not meant to cover conifers or cone-bearing trees alone, as the word is used in the east, but just what Webster says it means: any tree which retains its leaves through-out the year. Conifers, by the way, are unfitted for roadside planting except on avenues of unusual width, where 20 to 30 feet may be allowed for them, either along each side of through the center.

The author of "Gardening in California" says: "Conifers are frequently used for street planting, but language is not strong enough to condemn the impropriety of their use for this purpose. Public convenience demands the removal of all lower branches for a height of eight or ten feet of trees that align sidewalks or public highways. As the exquisite beauty of most conifers depends largely upon the integrity of their lower limbs, the impropriety of planting any tree subject to these requirements becomes apparent."

The same may be said of all cone-bearers and many others upon private premises. Trees of pyrimidal growth should be allowed the whole of their natural support.

Those wishing a deciduous tree should use for wide thoroughfares the Spanish chestnut, one of the grandest shade trees known; for a medium tree, the pecan; for a still smaller growth, the Texas umbrella. Another first class deciduous tree of medium size is the oriental plane (Platanus orientalis).

Our native live oak (Quercus agrifolia) easily stands first on the list of

Continued on Page 282

Part of Flock of 500 Indian Runner Ducks bred by H. M. Warren. Santa Cruz.

THE DUCK THAT BEATS THE HEN

What Indian Runners Will Do—By H. M. Warren.

Little has been said in poultry journals about the famous Indian Runner Ducks. As layers, these ducks lead the world. In all legitimate contests they stand at the head. Experiments have been made in England and America for several years, and a conservative estimate places their average at 200 eggs each per year. I have had them lay 229 eggs in a year. My flock of five hundred birds will easily average 200 each per year.

The fact that they are prolific layers is not the only point to be taken into consideration. It must be remembered that they are immune from disease and vermin, and require little or no housing.

Nor is it at all essential that they should have an abundance of water to swim in. A drinking fountain is all they require.

They are inveterate foragers, and thrive best on free range, a two-foot fence being all that is necessary to keep them within bounds.

When these birds have reached a marketable age (10 to 12 weeks) they have nearly attained their growth. and have little to do but to complete their plumage and commence laying. They lay as early as a Leghorn pullet. but lay much larger eggs and a great many more of them. They are quite unlike other duck eggs, being of a fine delicious flavor, differing very slightly from hen eggs.

I find them the ideal duck, easy to raise, excellent layers, fine table fowls, juicy and fine grained, require no running water, bear confinement well, are good foragers, eat very little more than a hen and are better suited to California climate than any other domestic fowl.

Indian Runners have come to stay. They have passed the experimental stage, and I believe the time is not far distant when the hen will be relegated to the rear, only to be superseded by her world-renowned rival—the Indian Runner Duck.

Deciduous Fruit Culture

BY J. W. MILLS, POMONA, CAL.

FERTILIZER FOR VINEYARD

Editor Cultivator—Please state in your paper what chemicals are best suited as a fertilizer for a vineyard and what proportion. Land is gravel. A. H. D., Etiwanda.

We cannot tell you what chemicals to use on a vineyard which is planted in gravel. No chemicals will give desirable results on such land. We have not much faith in artificial fertilizer unless there is plenty of humus in the soil. We would advise using stable manure; let the weeds grow and plow them under.

FERTILIZERS AND BUSH FRUIT

Editor Cultivator—Will you inform me and others interested, how to get cranberry roots, as I wish to plant a few for family use in a boggy place on the mountain where we live?

What is the value of unleached ashes per bushel; also that which has been exposed to the weather for two or three years? What are well rotted fertilizers from the horse barn worth per cubic yard; also those from the cow and chicken yards?

Where can I get roots or cuttings of the black, white and large red currant? A. E. M., San Diego, Cal.

We would suggest that you write to the Director of the Agricultural Department of State University of Maine for information about cranberry roots. Any of the San Francisco or Los Angeles seed and plant companies ought to supply you with currant roots. They advertise in this paper.

There is no way of telling what stable or any other kind of manure is worth until you get an analysis of it. The value of the fresh varies with the kind of feed given the stock. That which is leached by rains varies again with the rains, the amount of water that has run through the manure. Orange growers are in the habit of paying from two to four cents per cubic foot for stable manure.

Ashes vary as much as manure. The hardwood ashes contain more mineral matter than those from soft wood. If coal ashes are mixed in the value is much reduced. If the ashes are leached there is no telling what they are worth unless you have an analysis made. We would not care to give over $4.00 per ton for ashes, not knowing the amount of potash and phosphoric acid they contain.

Hen manure is worth about $6 per ton if kept moist, never having been allowed to dry out. If it has dried at any time the silica solidifies and encases a large part of the mineral salts and renders them unavailable and so reduces the value.

WORM EATING CANTALOUPE SEED

Editor Cultivator—There has appeared in this locality a small white worm that attacks the cantaloupe seed just as it begins to sprout. It appears to be almost entirely confined to ground upon which corn has been raised, although some report it on new land. Will you kindly let me know through the columns of your valuable paper as to the remedies, if any, and how to apply; also if it has appeared in the other cantaloupe-growing sections. J. H. S., Brawley.

Our attention has not been called to this pest before. We know of no practical remedy for destroying the worms without also destroying the plants. If we knew the habits of the worms we might know what to do. We suggest clean culture between cantaloupe crops for a couple of years. A parasite will catch your worms after a while.

SUGAR CANE

Editor Cultivator—Please let me know through Queries and Replies where I could get sugar cane roots or seeds. I have never seen them advertised so don't know where to get them, having seen your article, "California Sugar Cane." I hope you might be able to tell us. J. C., Anaheim.

We suggest that you write to Mr. Alexander Craw, at Honolulu. He will no doubt take pleasure in sending you a few joints. The "California Sugar Cane" we illustrated was grown by B. W. Lewis, at Corcoran, Tulare county; he may be able to supply you.

PROPAGATING PEAR TREES

Editor Cultivator.—I have one pear tree only, but it seems an unusual one. It is 17 years old, quite small, but bears a heavy load alternate years and a few every year. There has never been any blight, nor a wormy pear; has borne for probably 14 years. The pears are large, fine; taste like Bartlett, but are I think later than Bartlett. Can I set out the sprouts that came up at roots and later bud from the same, or can I plant the seeds and bud the plants. What is the pear? Yours truly, L. U. S., Glendora.

We would not advise you to plant sprouts that come up from the roots as such stock will continue to do likewise and cause you much annoyance. It will pay you to purchase seedling pear trees from some nurseryman and bud them. If your tree is a seedling, you will, of course, get the same kind of fruit on the sprouts which you would transplant, but if your tree is a budded tree you will get something else. You may plant seeds and bud the plants, but the stock may be inferior. There is a hardy pear that is grown expressly for stock that has been tested and found to be the best. It is handled by all deciduous fruit tree nurserymen. We cannot tell you the name of your pear. If it is a seedling, it is waiting for a name. No doubt Mr. Geo. C. Roeding, of Fresno, would recommend you as a competent person to give it a name. Your description of it would indicate that it is worthy of a name.

WALNUT BLIGHT

The following recommendations relative to the prevention of Walnut Blight or Bacteriosis are based upon several years of careful experiments by the United States Department of Agriculture. They are given to enable the growers of walnuts throughout the State to take advantage of the work of the Department on this disease so far as the experiments have progressed. The following treatment will reduce the loss one-half.

1. All infected trees should be pruned carefully to remove branches showing the action of the disease of the previous year. Remove the dead tips of limbs, especially those of last year's growth, cutting well back of the diseased parts. Also cut away small limbs which show the blackened scars of the past year's disease, where the organism causing the disease winters in the pith cavity. Burn all prunings.

2. Spray the dormant trees thoroughly with the Bordeaux mixture. This work will give the best results if done some two weeks before spring growth begins. All portions of the tree should be treated, special attention being given to the wood of last year.

3. Spray the trees a second time as soon as the nuts are firmly set, using the same spray and making a special effort to treat the young nuts upon all sides. The object is to protect the nuts from infection.

4. Prepare the spray as follows:

5 pounds of copper sulphate.
5 pounds of good quick lime.
50 gallons of water.

(a) Slake the lime in an oak barrel in a small amount of water. When perfectly slaked, add enough water to make 25 gallons of milk of lime.

(b) Thoroughly dissolve the copper sulphate in an oak barrel containing 25 gallons of cold water.

(c) Continue to pour one pailful each of the milk of lime and of the copper sulphate solution simultaneously into a third oak barrel, holding 50 or 60 gallons, until all of the two solutions are thus united. Stir the milk of lime as it is dipped out and pour it through a fine wire strainer into the mixing barrel.

(d) When the mixture in the third barrel is well stirred it will be ready to apply as a spray to the trees. Spray the trees while the mixture is fresh and stir the latter occasionally.

(e) The spraying should be done if possible when there is little or no wind.

(f) Use a spray pump which will maintain a pressure of 120 pounds or more, and such nozzles as necessary to reach the highest limbs and do the best work over all portions of the tree with the least waste of spray.

Newton B. Pierce,
Pathologist in Charge.
Pacific Coast Laboratory
and Plant Improvement Gardens,
Santa Ana, California.

We sell country lands. CHATFIELD & VINZENT, 228 Montgomery St., San Francisco, Cal.

Plant Loganberries

For profit. We are prepared to purchase the fruit and, in fact, all kinds of small fruits, even if too ripe for other uses. If you have

Culled or Unmarketable Oranges and Lemons

it will be to your best interests not to sell to peddlers, but to dispose of such fruit to the

Sherman Concentrated Fruit Co.
427 N. Anderson St., Los Angeles, Cal.

THE VERNON NURSERY
4524 Central Ave., Los Angeles, Cal.
A Good Stock of first class Seedling Soft Shell Walnuts yet on hand.
Phone: South 1105 A. YARNELL, Prop.

PLANT THE . .

Lob Ingir

Smyrna Fig

This is the world-famed **Fig of Commerce.** $15.00 per 100. We also have a large stock of IXL Almonds, French Prunes and Bartlett Pears. Write for prices.

Maywood Colony Nursery
W. Herbert Samson, Prop. Corning, Cal.

GRAPE VINES
25,000 Missions, 3,000 Muscat, 3,000 best varieties for table and shipping. All first-class vines, at wholesale prices.
T. S. INGHAM, HIGHLANDS, CAL.

TREES!

80,000 Apple Trees in 42 Varieties. Extra well rooted. Clean. Grafted on whole roots and free from all pests. Also an extra fine stock of Prunes, Pears, Plums and Walnuts. Write for price list. ***A. F. Scheidecker,*** Proprietor Pleasant View Nursery. ***Sebastopol Cal.***

900 Thrifty Walnut Trees
FOR SALE
From 2½ to 8 feet in Height
W. W. ALWARD
Central Avenue, 2nd House South of Slauson, Los Angeles, Cal.

BALFOUR, GUTHRIE & CO.
IMPORTERS OF
THOMAS PHOSPHATE POWDER
AND
NITRATE OF SODA
SAN FRANCISCO FRESNO LOS ANGELES
WRITE FOR PAMPHLET AND PRICES

Mulberry Trees

Six varieties for Silk Producing and Fruit Berries. Special attention is called to the Morus Nigra, a Persian variety especially for fruit. Also to the Japanese Mulberry, a variety generally used for silk culture.

I am also prepared this year to furnish 10,000 Rooted Grape Vines, following varieties: Flaming Tokay, Black Malvoise, Black Prince, Cornichon, Sable Kanski and Muscat. I have also some very fine Orange Quince Trees and Pomegranates. Send for descriptive circular free by mail.

R. P. LAWSON, 252 No. Avenue 21, Los Angeles, Cal.

GEO. B. WARNER'S
Orange County Nurseries

Choice line of Orange Trees, consisting of Valencia Late, Wash. Navel, Navelencia, King Tangerine. Eureka Lemon, Budded Loquat, Blue Gums, Red and Sugar Gums, large stock Soft Shell Walnut trees 3 years old, Grafted Walnuts, Palms, Shrubbery, and general line of deciduous fruit trees. Write for price list.

Est. 1889. SANTA ANA, CAL.

Apple Trees

5 to 7 feet, one year old, $20 per 100. Grown in Riverside. Clean and healthy. ***Cornichon Grape Vines,*** $25.00 per 1000.

Jurupa Nurseries, Riverside, Cal.

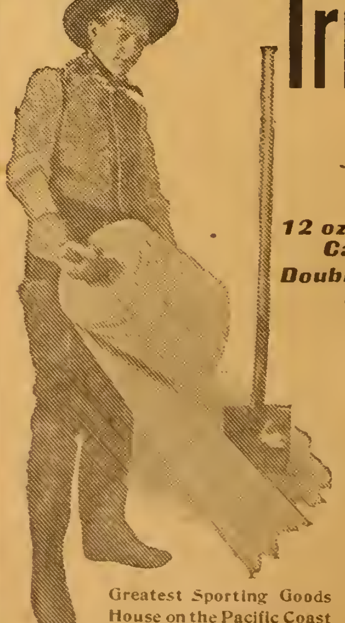
WALNUT TREES

Grown from carefully hand selected seed. To clean up—I will sell balance, 6 to 8 ft. trees, at a

GREAT REDUCTION

Come, Write or Wire

A. A. Mills Anaheim, Cal.



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We Make It by the Mile

12 oz. Canvas Double Filled

1¾ Inches
2½ "
4 "
6 "
9 "
13 "

Every Inch Good

Something New

We now make Ladies' Outing Suits of khaki, corduroy, canvas and leather. Write us about it. Address Dept. 5.

Greatest Sporting Goods House on the Pacific Coast

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138-140-142 So. Main St., Los Angeles

Practical Farm Science

BY PROF. A. J. COOK

BEET CULTURE IN GERMANY

I have been investigating as thoroughly as I am able the methods of beet culture in Germany; that I might compare them with ours in the United States. They plow deeper than we do. They plant closer and cultivate more carefully. They depend almost wholly on stable fertilizer for humus, as such manure is cheap and easily secured, and use far more commercial fertilizer than do we in America. They practice what we believe, in reference to deep plowing. They think they add to the sugar content by close planting; they say the land must be kept mellow by frequent cultivation, and that weeds must not be permitted to rob the soil and crop of the needed soil elements. Hand labor is so cheap here that often it largely supplants horse culture. As yet they do not plow under "green crops" to any considerable extent. They hold to old-time practices of using barn yard manure. They have learned from trial that commercial fertilizers, superphosphates and soda nitrate pay a great profit on their cost, hence their more liberal use of such fertilizers.

* * *

EXTRACTED HONEY

This is honey thrown out by centrifugal force or the honey extractor. It is not strained honey, but a far different and more desirable article. Indeed it is just the same as comb honey, only here the wax of the comb is not present. We have simply the liquid honey with no comb to accompany it. As comb is wholly indigestible this extracted honey has the same nutritious contents as does the same amount of honey in the comb. The comb serves two purposes; it makes honey as a table article more attractive and it acts as a diluent, and as we thus get the honey in a little less concentrated form we do not eat it so rapidly. and so tire of it less quickly; especially if we are not vigorous and possessed of a workman's appetite.

For California, and any country far distant from market, extracted honey is especially worthy the attention of the bee-keeper. It is easier to ship and is in a safer form for shipment than is comb honey. It is also easier to secure a good crop and the beekeeper may hope to succeed with less of skill. One can produce extracted honey in California with surety of a profit if he can be assured six cents per pound. While in case of comb honey he must get ten cents to do so well; some say 12 cents or twice as much. It has been the desire of beekeepers for years, to breed a race of bees with the swarming instinct reduced to the lowest possible point. They wish the full energy devoted to honey production and not to increase of colonies. In the production of comb honey, this is very important; in the securing of extracted honey, the beekeeper easily controls the swarming tendency, and so here is another decided count in favor of working for extracted honey .

There are a few Golden rules for the California beekeeper to observe in this quest of large harvests of extracted honey. He must not extract too close so as to leave the bees too scant of stores at the end of the season. He must be sure that his bees have sufficient honey in the hives that none will starve. This is especially important in view of years of drouth and no honey production. It is also more to be guarded against when we extract than when we work for comb honey. It is so easy in our extracting near the end of the season to extract too closely. We must be very careful that our bees never lack honey sufficient for their own maintenance, and best energy, and we must see to it that they are strong and in the best heart at the dawn of the honey season. This may require us to feed to stimulate as the honey season draws nigh. Another very important caution has reference to unripe honey. We must never extract till the honey is mostly capped over. Then we shall be sure that it will be thick and excellent. It is so much easier to extract before the honey is capped at all, as then we are saved the labor of uncapping, and the thinner condition of the honey makes it easier to throw it out, so that there is ever the temptation to this premature extracting. Yet the honey thus secured will never be of high grade, and such practice not only injures the beekeeper himself, but all beekeepers, as it hurts the reputation and demand for honey.

NITROGEN-FIXING BACTERIA

The extravagant and misleading claims contained in some of the advertising matter now appearing in legumes make it necessary again to call attention to the limitations of the value of inoculation. Summarized from our bulletins, they may be stated as follows:

No beneficial results can be expected for a particular crop if the bacteria for that crop are already present in the soil.

But little, if any, benefit can be expected from the use of these bacteria if the ground is decidedly in need of other fertilizers, such as prosphates, potash or lime.

But little, if any, benefit can be expected from inoculation if the soil is already rich in nitrogen.

The Analey Standard' reports the hop growers of Sonoma county as rejoicing over the great saving they are making in the purchase of supplies this year. Besides a saving of fully 50 per cent on the annual insurance, the exchange has arranged to secure hop cloth and twine by the carload lots for the members at a saving of 25 cents a bale for the cloth, or $2250 saving for the year's supply for the crop. The saving on twine is about in proportion. One grower states that in insurance, cloth and twine he will make a saving of fully $150 on his crop of 5000 bales.

Representative McKinlay and other backers of his bill giving permission for diversion of Sacramento River waters in Tehama county for irrigation of 200.000 acres of land in Glenn county and vicinity are anxious to have the measure referred to the House Irrigation Committee. Mr. McKinlay says the bill ought to pass, and the entire California delegation supports him.

After each rain the soil should be well cultivated—it may be the last rain of the season—see that the soil moistured is conserved.

Do you get the **Price List** of the **IMPERIAL CASH STORE?** If not, better send for it today. The best, cheapest and most reliable Mail Order House on the Pacific Coast. 532 Washington Street, San Francisco. California.

Italian Queens

Stock your apiary with Italians and increase your honey crop. My queens will give you satisfaction. I am now booking orders for May delivery. Untested, $1.00; tested, $1.50. For large amounts write for prices.

M. D. Whitcher Los Olivos, Cal-

GRAPES draw large quantities of POTASH from the soil. This must be replaced in the fertilizer, else the vine cannot thrive.

Interesting pictures of grape vines, grown with and without POTASH, are shown in "Plant Food," one of a number of valuable books for the farmer, which we send free for the asking. Send name and address.

Address, GERMAN KALI WORKS, 93 Nassau St., New York.

Meyer Wilson &Co., San Francisco, San Francisco, Cal., are Sole Agents for the Pacific Coast

Bee Keepers' Supplies

The only house west of the Rockies carrying a complete stock all the year. Write for catalogue of everything which pertains to Bee Culture

Madary's Supply House - 737-739 Aliso Street, Los Angeles, Cal.

Dried Ground Tankage

THE BEST AND MOST ECONOMICAL FERTILIZER

ANALYSIS { 10½ per cent Ammonia
18 per cent Bone Phosphate

WRITE US FOR PRICES AND PARTICULARS

Western Meat Company - - San Francisco

FERTILIZERS

WHAT'S THE USE OF TALKING?

FERTILIZING PAYS

Mococo
FERTILIZERS

CHEMICAL FERTILIZERS ARE WHAT YOU NEED

But "any old Fertilizer" won't do the trick.

To make a success, the requirements of soil and climate must be carefully met.
We make a specialty of fertilizers for fruit farming also suitable formulas for cereals, vegetables, etc. Our factory is the largest on the Pacific Coast, our goods are right and our prices are low.

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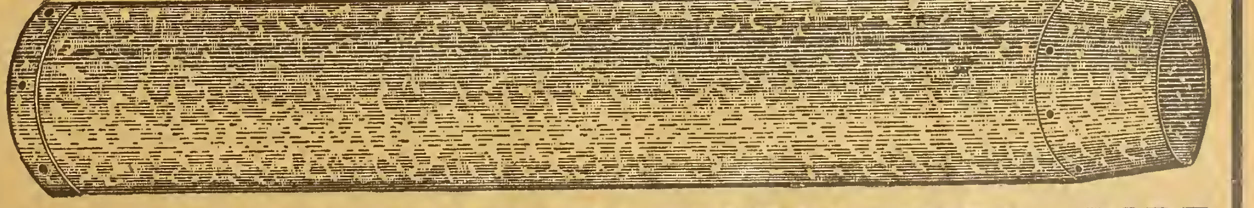
When Writing to Advertisers Please Mention Cultivator



TALLERDAY SURFACE IRRIGATION PIPE

SAVES WATER, GRADING AND TIME

The ***only*** way to ***Irrigate Alfalfa. Cheaper*** than ***Flumes.*** This is only ***one*** of our ***specialties.*** We make ***Riveted Water Pipe*** in lengths of ***Ten Feet*** from ***Single Sheets.*** Let us ***prove*** to you that we make ***Pipe*** and ***Tanks Right.*** WRITE FOR CATALOGUE.

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ROEDING TRUE TREES FRESNO, CAL.

Comprise over 1160 acres situated in the best location in the bountry for producing the most perfect and healthy

TREES

and by our system of growing different varieties in our separate nurseries we are able to grow stock of the very best quality.

DECIDUOUS

Apples, Pears, Plums, Prunes, Cherries

NUT TREES

Walnuts and Pecans on their own roots and grafted trees.

CITRUS

Oranges; Lemons, Pomelos, Citrons

GRAPES

Grafted and on their own roots. All the leading table, wine and raisin sorts.

Berry Plants,
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Ornamental Trees and Shrubs,
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CALIMYRNA FIGS

Our great specialty. None genuine without our seal.

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Catalogue

We will mail our large, profusely illustrated catalogue, English or Spanish, to any address on receipt of 5c postage. Price List on application.

Paid-Up Capital, $200,000.00

FANCHER CREEK NURSERIES (Inc.)

Geo. C. Roeding,
Pres. and Manager
Box 14,
Fresno, Cal.

FROST PREVENTION.

Editor Cultivator: Will you kindly tell me of the best modes employed for prevention of frosts? A number of us are anxious to know how we can save our apricots from frost, and think an article on the subject would be greatly appreciated.—J. L. M., San Jose.

It is doubtless too late to be of great value for this season to make a regular article on frost prevention, which has been treated in the Cultivator extensively heretofore. but to get the latest information on the subject we wrote to Mr. James Mills, of the Arlington Fruit Company, Riverside for a short statement of his latest experience, and he replies as follows:

"Replying to your favor of March 13th, regarding inquiry from a subscriber in San Jose, touching frost prevention, I beg to say that we have been using for three years, when necessary, the smudge material, manufactured by Geo. Griffiths who resides at 1023 S. Broadway, your city. We first used this in the form of "briqnetts." We found, however, that it was very hard to light and hard to keep burning when used in this form. Mr. Griffiths is now manufacturing his material and sacking it instead of making it up into hard bricquetts. This material we can easily handle in the orchards and we burn it in sheet-iron smudge stoves, that is a circular vessel 14 inches in diameter, 12 to 14 inches deep, perforated with many holes to give a draft and with a little chimney running up the center. This stove will contain about one-third of a sack and when properly pressed will burn from two to three hours. The material thus used is easily lighted and burns freely without attention. The stoves are also very easily and quickly refilled if required during the night. Two men can take care of 20 acres. We light them with torches and use in addition a little coal oil. The man carries a gallon can of coal oil, a little of which he pours on to the smudge material and then touches it with his torch then moves on. The smudge material quickly ignites and burns splendidly, giving a great deal of heat and clouds of smoke. I do not know of anything that will answer the purpose better than Mr. Griffith's material. Given a sufficient number of stoves and enough material, I see no reason why the orchard and fruit canot be saved at any temperature we may possibly experience. In a few low places we have used a hundred stoves to 10 acres. If the stoves were doubled the cost would not be prohibitory providing of course the trees were saved.

I know of no other methods that are superior to this one for prevention of frosts. Running water is very helpful. The trouble is that all affected can not have the water when needed. No water system can possibly furnish water to all of its users at the same time. Yours truly—James Mills, Supt. A. H. F. Co.

ENDING THE SEASON'S PEAR BLIGHT WORK

Prof. Waite and his assistants from Washington, have concluded their labors in California for the present season and have returned to the East, to take up work in other lines. Prof. Waite will probably come to California again about the pear ripening time to see how effective the work has been in the sections where it has been done, and may be with us again next winter. The whole object of the past work has been to make a demonstration on a large scale of the efficacy of Prof. Waite's method of cutting out the hold-over blight, for this purpose infected sections have been selected and the work done thoroughly. It remains for the coming season to show all that is expected from it, then next winter should see every particle of the blight removed from the pear orchards of the state, and after that a careful watch kept to check it as soon as it is seen. By these means we may hope yet to save our important pear industry.

IRRIGATION IN ITALY.

In northern Italy the construction of canals and aqueducts for irrigation is being pushed on a large scale, and the irrigated areas are constantly expanding. Yet Italy has no greater need of irrigation than any state in the American union.

Seeds of tender annuals may now be sown with safety.

Patronize Home Industry

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Absolutely Pure
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Best Sulphur for Bleaching and Spraying Fruits & Vines

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Portable and drill any depth by steam or horse power. 42 Different Styles. We challenge competition Send for Free Illustrated Catalog No. 13.

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The Bolton Electric Automatic Alarm Thermometer

Will ring a bell at any desired temperature. Same as a telephone call. For prices and particulars address

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A BIG PEA IN A BIG POD

Lilly's Mt. Rainier early Pea is dark green in color, and always fills the pod with plump, luscious peas.

The Mt. Rainier has been perfected in our own experimental gardens on Puget Sound.

It is the finest early pea ever offered to the public and is absolutely reliable and a sure producer because it has been adapted to Pacific Coast conditions.

Its sweet delicate flavor and dark green color make it a favorite with high class hotels and restaurants.

The Mt. Rainier's enormous productivity and the high price it always commands renders it extremely profitable for market gardening.

The vines grow two to three feet high and should be supported to give the best results.

Lilly's Mt. Rainier is a superior pea for canning purposes. Its deep green color withstands the canning process perfectly and it is as vivid and inviting as the best grade of imported French peas, most of which are colored artificially.

The market gardener and any person fond of peas should try the Rainier this season. It is a little better than the best pea you ever tasted before.

Order now. Prices: Pckt. 10c. ½-lb. 20c. Lb. 35c prepaid. By express or freight at purchaser's expense. Lb. 25c. 10 lbs. $2.00. 100 lbs. $15.00.

Cut this out and mail to

Chas. H. Lilly Co. SEATTLE, WASH.

Find enclosed $______ in stamps or money order for which send me ______ Mt. Rainier early pea seed.

Name ______

Address ______ R

With the Citrus Growers

BY J. W. MILLS

METHODS

Every now and then some man engaged in the same business as hundreds of others, makes more money than his fellow business men even tho' he has the same market and his goods are no better. All conditions seem to be the same and the same advantages seem to be open to all alike. The other day we had occasion to notice these things in conection with orange growing. There were three concerns that illustrated the peculiarities of trade. We will call these concerns A, B, and C. They all grow, pack and ship their own fruit. A raises a fine grade of Valencias and a rather poor grade of Navels. B raises as fine a grade of Navels and Valencias as A. C raises better Navels than either of the other two. A has built up a reputation on his Valencias and sells his at a higher figure to the same wholesaler as does B. It has puzzled and aggravated B to think that the same wholesaler should make the distinction when it is evident to both of them that there was no difference in the fruit. The wholesaler defended himself by claiming that the jobber paid him the difference simply on sight of the brand of A's fruit. Then here comes along C with his Washington Navels which cannot be excelled by any grown in California, but they do not bring the price that A's inferior Navels do. The secret here is, that A's inferior Navels ride in on the general reputation of his pack.

We had a chance to see why A now has his reputation established while other growers have not. He began early, before any government specialist came around and told him how to find out the little defects in the systems of handling. He did not pay by the box for picking nor packing. There was never any excuse for a picker or packer to hurry, still a system was used whereby it was known how many boxes were picked and packed by each individual. Every orange is wrapped with the apex in the center of the print and every orange is carefully placed. The pack gives a retailer a full box and when opened is an ornament to any fruit stand. There are plenty of packers that are putting up handsome packages, but Mr. A mentioned above, commenced early and now he is in the lead. It is his reputation that stands him in hand now, but it was his methods that did it.

PRESSING WORK FOR THE PATHOLOGICAL STATION

We recently met a citrus grower who has reason to be impatient over the prolonged delay in getting the pathological station established. What was once one of the most prolific and profitable lemon groves in the state, is fast becoming non-productive. The branches have stopped throwing out new growth and few, if any, fruit buds develop. The leaves drop off and the trees have a wornout appearance. Accompanying these symptoms is a rupture of the bark at some point near the base of the trunk. There is little evidence in some cases of gum, but generally there is no indications whatever of gum. Beneath the ruptured bark is a granulated form of growth that takes the place of the smooth bark.

The lemon grove has received the best of care and has received a liberal amount of stable manure. These liberal treatments have been given to meet the demands of exhaustive crops which have been gathered from the trees year after year. Here is a case that needs the attention of a pathologist at once as the disease but recently appeared.

APPLYING PHOSPHATES

This question is always being brought up and seems to be one which bids fair to be a puzzler for some time. The best time and manner in which to apply it are things not definitely settled yet. The time to apply it is not so important a question as how to apply it. There is no doubt but that it will become available when ever it comes in contact with sufficient humic acid. We get this idea from the fact that the greater part of the available phosphoric acid is found in the humus of soils. This is not a bare theory, but the result of practical observation which is in harmony with the theories on the subject. This works in well with the theory that green-manuring is an ideal mixer for our orange groves. But hold! This is also one of those things that has ceased to be a theory. Can there be any better method of applying phosphates than feeding them to catch crops and giving them the work of sending them down below where the plow or drill can reach? When the phosphates are used by the legumes or other plants or weeds, the fertilizer is carried to all parts of the plants and left right there if the plants are plowed under before they go to seed.

There is no possible way for a human being to apply a phosphate in so finely divided a form to the roots of plants as can be done by plants themselves. This we think is the secret of successfully using phosphates.

Climate and Crops

The weather was unsettled throughout California all of the week. In many ways the weather was phenomenal. A storm. which was plainly marked at the close of the preceding week, did not follow the usual order and move eastward from the State. On the contrary, as late as Saturday night stormy conditions continued. The delay in the storm's movement was doubtless associated with the prevalence of high pressure and typical winter weather over the United States north and east of the Sierra. If the storm had moved rapidly southward and been followed by the high overlying Oregon and Washington, in all probability killing frosts would have occurred throughout California on successive mornings. As it was. the heavy rains and strong southerly winds, and at times strong north winds prevented destructive frosts.

Seasonal rainfalls to date, compared with those of the same date last year, are as follows:

Stations	This season	Last season
Eureka,	27.67	25.10
Red Bluff	20.02	29.33
Sacramento	14.00	17.44
San Francisco	13.15	18.55
San Jose	11.03	14.15
Fresno	8.05	9.63
Independence	5.22	3.60
San Luis Obispo	17.35	19.03
Los Angeles	11.94	17.65
San Diego	9.46	13.81

Valencia Late

And all leading varieties of orange and lemon trees, and Marsh's seedless grapefruit. Trees one and two years old. Extra fine and thrifty and no scale. Plenty of fibre roots.

H. H. LINVILLE, Highland, Cal.

THE "BOSS" TREE PROTECTOR

Made of Yucca Palm

Is cheap, durable and quickly put on the tree. It prevents Rabbits from destroying your trees. A sure protection against frost, sun-burn grasshoppers or dry winds can be easily removed; will last for years.

Send for samples.

PRICES

12 inch long, $ 9.00 per 1000
14 inch long, 10.00 per 1000
16 inch long, 11.50 per 1000
18 inch long 12.50 per 1000
24 inch long 15.00 per 1000
30 inch long 17.50 per 1000

Agents Wanted Everywhere

YUCCA MANUFACTURING CO.
2124 Willow Street Los Angeles, Cal.

VALENCIA LATE

And all the leading varieties of Orange, Lemon and Marsh's Seedless Grape Fruit Trees for sale. Are principally two years from bud and very fine. Can furnish from my nurseries at Glendora, Riverside or Redlands, as desired. Address

Redlands Nurseries, E. I. Martin, Prop., Redlands, Cal.

2000 W. N. ORANGE TREES

Two years old. First-class at $20 per 100.
Silas Toms & Son
Enterprise Nursery Pasadena, Cal.

Citrus Trees

All the Standard Varieties

Citrus Seed Bed Stock

B. C. Benner Nurseries - San Dimas, Cal.

WASHINGTON NAVEL TREES

TRUE TO NAME

ALLEN DODD · SHORB, CAL.

Omburt Nurseries

GLENDORA-AZUSA PUMPING PLANT,
ONE MILE NORTH OF SAN DIMAS

15,000 Fine Trees three years from seed next spring. No clubs—fine fibrous roots; just the tree to take hold of a new home.

Valencia, Na-Valencia, Improved Navel, Washington Navel Oranges and Nectar Pomelo.

Not touched by the frost.

A. P. Griffith, Azusa, Cal.

CITRUS SEED BED STOCK

F. H. DISBROW NURSERIES
PHONE 949 R. D., PASADENA, CAL.

CITRUS TREES

20,000 late Valencia and Navel Orange, Eureka lemon and Seedless grapefruit 1, 2 and 3-year buds. All stock first-class in every respect.

POLLARD BROS.,
ALHAMBRA, CALIFORNIA

10 per cent gross on every car is being saved by growers using the new patent Cyclone Car Cooler (Famous Intermittent Vacuum Method). Address today Chas. F. Edson, Manager Citrus Cooling Company, 950 West 20th Street, Los Angeles, Cal.

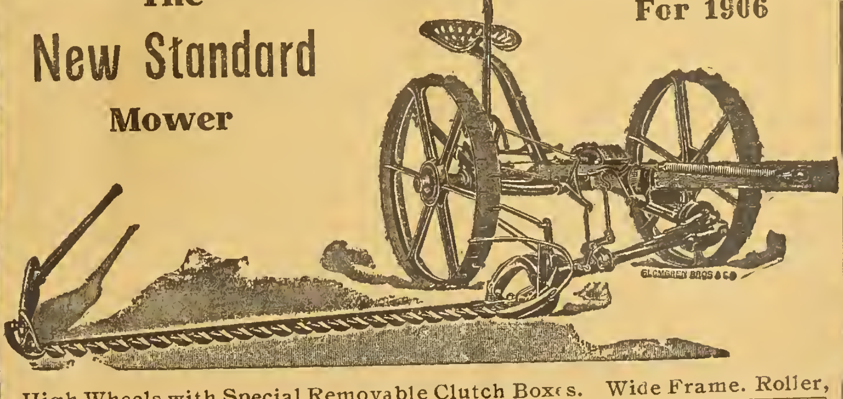
Washington Navel Orange Trees

On the Citrus Trifoliate Root

Two-Year Buds, very fine and thrifty. This tree is very hardy, well adapted to localities a little too cold for other varieties of Orange Trees.

Twogood Nursery Co., Reynolds Block, Riverside, Cal.

The New Standard Mower For 1906



High Wheels with Special Removable Clutch Boxes. Wide Frame. Roller, Brass and Ball Bearings. Three Motion Gear with 22 Cog Gear Clutch. Curved Cutter Bar, Suspension Spring and Compensating Lever. Reversible Guard Rails. Separate Hand and Foot Raising Levers. Descriptive Circular sent on application.

Newell Mathews Co.
200-204 North Los Angeles Street
Los Angeles, California

ORANGE TREES

Oldest Established Citrus Nursery in California, at Alhambra, Los Angeles County

Late Valencia and Washington Navels, Lisbon and Eureka Lemons. Guaranteed true to name. No better trees in this State. Lowest market price. Three-year buds, four-year roots. Horticultural Commissioner's certificate. Order early, as good trees are scarce. Inspection invited.

E. G. Wood, Owner, at Nursery or Room 732 Huntington Building, Los Angeles, Cal.

The Ornamental Garden

BY ERNEST BRAUNTON, LOS ANGELES, CAL.

ORNAMENTAL ASPARAGUS

The asparagus section of the lily family is one of the best and perhaps the most common. Almost everyone has a "Sprengeri," a "plumosus" or "asparagus fern," or a few vines of 'smilax" (Asparagus medeoloides). Two very beautiful kinds which Prof. Bailey places under the name of A. crispus, are known to horticulture as A. decumbens and A. scandens var. deflexus. The former is a very slender climber and in this climate seems to be deciduous, while the latter is an evergreen and considered by the writer as the most beautiful of the genus. It does not climb, but grows very thick and bushy, making a splendid pot plant. It will stand any treatment that A. Sprengeri will, and is a much finer plant in every way. It does not, however, grow so large or so fast as that species. The latest asparagus introduced to California is A. retrofractus, a very strong grower, reaching to twenty feet in height, perhaps more.

CARE OF SCHOOL GROUNDS.

Every effort should be exerted to do the work well in the beginning. If all preparations are thoroughly considered. and the details carried out with care, the premises should become more attractive year by year with almost no annual outlay of labor. The school grounds should be able to take care of themselves when once the place is set in order.

Of course, better results are to be expected when much labor is put on the grounds each year, but it is useless to advise such expenditure for the rural schools. But it is surprising what excellent results can be secured with almost no attention from year to year.

While the main planting should be made up of common trees and shrubs a rare or strange plant may be introduced now and then from the nurseries, if there is any money with which to buy such things. Plant it at some conspicuous point just in front of the border, where it will show off well, be out of the way and have some relation to the rest of the planting.

RENOVATING LAWNS.

In renovating lawns that have become worn out, and where it is not convenient or desirable to renew by spading up, they may be greatly benefitted by running over with a sharp steel rake. After stirring the surface by such means judiciously, so as not to hurt too severely the roots, lawn grass should be sown over the surface raking in about half the quantity advised for new lawns. After sowing the surface should be raked over, and firmly rolled or beaten down, but if Bermuda grass or other weeds have got posession, then this way of renovation would not be satisfactory, and it had better be turned under and sown afresh. In case Bermuda grass is present in considerable quantity, the old sod should be taken away and piled up where it may be rotted, and from the soil beneath all Bermuda roots should be worked up and picked off. Then, if time will permit, allow the soil to thoroughly dry out before again sowing.

SCHOOL GARDENS.

More than one-third of all public schools will probably always be in the country. They will have most intimate relations with rural life. We must make that life attractive to the pupils.

In Europe there are school gardens, and similar plans are recommended for this country. It is certainly desirable that some area be set aside for the actual cultivation of plants by the children and for the growing of specimens to be used in the school room. However the conditions of Europe are very different from ours. In the rural school in Germany and other countries the school house is the teacher's home. He lives in it, or by it. The summer vacation is short. In this country there is no one to care for the rural school grounds in the long summer vacation. Teachers change frequently. It is impossible to have uniformity and continuity of purpose. In the old World, the rural schools are in the hamlets.

THE LAWN

There is nothing more charming than a well-designed house surrounded by artistically treated grounds; and of the essential features of home grounds none is so important as a beautiful lawn—the rich, velvety turf of the smooth, well-kept lawn, varying in tones of green with the play of sunlight and cloud shadows, being the heart and life of all.

"The Tropics may have their delights, but they have not the turf, and the world without turf is a dreary desert. The Teutonic races all love turf; they emigrate in the line of its growth."—Charles Dudley Warner.

A lawn may be formed either by laying turf or by sowing seed. The gain in time by sodding is mostly in anticipation, an advantage so slight as to be scarcely worthy of consideration, while the results obtained by both methods are not to be compared. Sods, no matter how carefully cut and closely laid, often separate, leaving crevices about which the grass dies out in dry weather; then the grasses that compose a pasture or roadside sod (generally the kind used for "sodding" lawns) are not at all the best for forming a perfect lawn; besides, the smooth, elegant surface, such a desirable feature of a lawn, cannot be secured by sodding.

A perfect and enduring lawn, one of luxuriant richness with closely interwoven, firm, deep and elastic turf, is only created by sowing a composition of the various kinds of grass seeds suited to the conditions and the climate. Several varieties are needed, that the lawn may be verdure-clad during all seasons, and the seeds must be sown liberally (at the rate of from four to six bushels per acre,) not only that a lawn may be produced quickly, but because the kinds of grasses suitable for perfect lawns are fine-leaved and should take entire possession of the ground promptly, thus checking the development of weeds, the seeds of which are in all soils. The coarse pasture and hummock-forming grasses will not produce a fine lawn. Good, rich, deeply worked soil, either of a friable texture or else under-drained, is as necessary for the production of a perfect lawn as for garden crops, although most grasses, being accommodating plants, if they do not get the requisites for the best results, will do their best with what is supplied them. Early and frequent mowing and rolling, as well as the liberal application of water through a lawn sprinkler during the dry seasons, is one of the secrets of maintaining beautiful green turf.—From Peter Henderson & Co.'s "Everything for the Lawn."

HORTICULTURAL SOCIETY

The Southern California Horticultural Society has incorporated under the laws of the State of California and is now a stock company. Two plant and flower exhibits will be given during the current year, one in May and the other in November. The flower show given by this society during the first week of November, 1905, was the most successful, from a financial standpoint, of any ever held on the Pacific Coast.

Now is the time to plant pansies for summer blooms.

ROSES
ROSES

All the best garden sorts, in fine vigorous plants, at proper prices.

Theodore Payne
345 S. Main St. Los Angeles

Armstrong Nurseries

Fruits and Roses

Illustrated and descriptive catalogue of California fruits and roses. Valuable to everyone improving their home grounds or planting commercial orchards. A copy is yours for a two-cent stamp to pay postage.

ARMSTRONG NURSERIES
Box 1114, Ontario, Cal.

CHRYSANTHEMUMS
Wholesale and Retail

The Queen of Autumn. Just what you want to make your garden beautiful. Send for our illustrated catalogue.

The Pomona Floral Nurseries
Cor. Pine and Grevillea Sts. North Pomona, Cal.

OLD-FASHIONED
GARDEN

LILLY'S BEST A large surprise packet, value 50 cents, containing seeds of over twenty different annual flowers—the kind your grandmother used to grow. Sown broadcast, will give you a bed of flowers in constant bloom. In place of other premiums, empty envelope is good for 25 cents in any order for $1.00 worth of seeds.

10c Mail us this ad and 10 cents and we will send you this 50 cent packet postpaid.

New Seed and Plant Catalogue Free.

Chas. H. Lilly Co. Seattle, Wash.

SEED PRICES CUT IN TWO

That's just what Salzer is doing—distributing among planters everywhere countless bushels of his hardy, Northern Grown Pedigree Seeds at one-half their real value. Take advantage of this unusual offer by sending *to-day* for a free copy of the Book of

Salzer's Bargains

and getting your year's seeds before the supply is exhausted. Cabbage, Beets, Radish, Onions, Corn, Beans, Tomatoes, also Salzer's famous farm seeds, such as Oats, Speltz, Barley, Potatoes, Timothy, Clover, Wheat, etc.,—all of them the cream of last season's wonderful growth on our seed farms.

LUSCIOUS RADISHES

Everybody loves a tender, juicy radish! And we want everybody to have them!

Send this notice to-day and receive free Bargain Seed Book and sufficient Radish seed to keep you in luscious radishes all summer long!

Remit 4c and we add package of Cosmos, the most fashionable, serviceable, beautiful annual flower.

JOHN A. SALZER SEED CO.,
Lock Box 50, La Crosse, Wis.

Sycamore Grove Nurseries

We do Landscaping in all its branches, but also carry a full line of Ornamentals and Fruit Trees. Several different varieties of Acacias and Eucalypti. Send for our prices.

SAINT & WARNER,
4584 Pasadena Ave. Los Angeles, Cal.

EASTER LILY FOR EASTER SUNDAY

Send 10 Cents

Will send you 1 Easter Lily Bulb, 1 Tuberose, 1 Gladiolus, 1 Cinnamon vine, 1 Oxalis also 100 different kinds of fresh, finest grown seeds, including Pansies, Petunias, Phlox, Asters, Stocks, Sweet Peas, Cosmos, Balsams, Nasturtiums, Morning Glories, Verbenas, Portulaca. This fine collection of seeds and Bulbs for 10c. in Silver or 2c. Stamps.

American Seed Co.
Malden, Mass.

Send For It, Catalogue 1906

The Most Complete Assortment of Flowering, Bedding and Decorative Plants on the Coast

Howard & Smith, Nurserymen

(Mail Address, P. O. Box 484)

Mention Cal. Cul. when writing. **Growing Department**—Montebello, Cal.
Sales Department—Northwest Corner Ninth and Olive Sts., **Los Angeles, Cal.**

C. C. MORSE & CO.

THE WELL-KNOWN

Seed Growers

FORMERLY AT SANTA CLARA, ARE NOW LOCATED AT

815-817 Sansome St., San Francisco

and are prepared to sell their seeds in any quantity, wholesale or retail.
Headquarters for ***Onion*** seed and all kinds of vegetable seed.
Also ***Sweet Peas*** and all kinds of flower seeds.
Also ***Alfalfa*** and all kinds of farm and field seeds.

Seeds of the Highest Quality Only

Write for Handsome New Illus. Catalogue

THE ANAHEIM EVERGREEN NURSERIES

Tim Carroll, Prop.

Anaheim, Orange County, California

The Oldest Nursery in Southern California
Established 1868 by the Present Owner.

Palms, Pines, Acacias, Cypress, Camphors, Eucalyptus, Guavas, Budded Loquats and all kinds of Ornamental Trees. Be sure and visit the Nurseries. A cordial invitation to all. Nurseries, 200 yards west of Loara Station, S. P. R. R. Our fine Illustrated Catalogue free. Write for it.

In the Vegetable Garden

BY ERNEST BRAUNTON

ENGLISH POTATOES IN AMERICA.

Consul Hamm. of Hull, sends a table giving the quantities of potatoes shipped at that port from November 11, 1905, to January 18, 1906. The total number of bushels was 152,000, worth $64,600, or about 42 cents a bushel. They came from Yorkshire and Lincolnshire. where the land is brought to the highest stage of cultivation and drainage and the best of fertilizers are used. The consul adds that it seems strange that England, with its crowded population, can exports thousands of bushels of potatoes to a country like the United States. with an abundance of cheap arable land. The American duty, too, is 25 cents per bushel.

IMPROVEMENT OF CORN.

During the last few years a great deal of work has been done toward corn improvement. Associations of farmers have been formed in several states for the purpose of improving their strains of corn in yield and quality, and adapting them to the needs of particular localities.

The members of these associations are engaged in corn breeding as a business enterprise, and pledge themselves to sell only corn with a registered pedigree, from breeding plots grown according to the rules of the asociation. These associations have been successful in their undertaking and the members of one of them have scarcely been able to supply the demand for the better seed, although it has been sold at more than double the former price.

Besides being able to increase the yield, vary the width of leaf, the amount of husk, the height of ear, etc., it is possible to change the average composition of corn, and by selection has increased the protein content of a dent variety of corn from an average of 10.9 per cent. to almost 15.0 per cent.

OUR TOMATO DISEASES.

The University of California has just issued a bulletin by Prof Ralph E. Smith, entitled "Tomato Diseases in California," (No. 175.) from which we take the following summary:

"Three serious tomato diseases occur in California: "Damping-off;" Summer Blight," and "Winter Blight."

* * *

Damping-off is a stem rot of the young plants in the seed-bed which occurs mostly in wet, cloudy weather or in seed beds which are over watered or poorly ventilated. It is caused by a fungus or various fungi which spread on the surface of the ground under such conditions and kill the young plants. To prevent this trouble it is necessary to use fresh earth in the seed bed, keep the soil dry on top, ventilate the beds well, and avoid overcrowding the plants. To check the disease when started, spraying the soil and plants with weak Bordeaux mixture. followed by a sprinkling of sulphur, is recommended. A trial of soil sterilization by means of steam is suggested to large growers.

* * *

Summer Blight is a wilt and gradual dying of mature or partly grown plants in the field, which occurs extensively in the San Joaquin Valley and Southern California, and somewhat in the San Francisco Bay region, mostly in the summer crop. The disease is caused by a species of Fusarium, a soil fungus, which causes a dry rot of the roots and cuts off the supply of soil water from the plant. The disease forms one of the present objects of investigation by this department. At present the only recommendations which can be made consist in taking great pains to obtain healthy plants, and planting in new soil. Applications of lime, sulphur, etc., to the soil may be tried by the grower, but the effect of such treatment has not yet been demonstrated. Spraying can not be of any use with this disease.

Winter Blight is a disease caused by the potato-blight fungus, Phytophthora infestans, which under favorable conditions, has seriously affected winter tomatoes in Southern California. The same trouble was observed on potatoes in Sacramento County in the fall of 1904 and spring of 1905, and in the coast region of Monterey County, but it is not very prevalent in California. This fungus causes a spotting of green and ripe tomatoes, dark spots on the stems and branches, and complete and sudden ruin of the crop. It occurs only after heavy rains or very heavy fogs and dews, and consequently affects only the winter crop of tomatoes. Such planting should be sprayed heavily with Bordeaux mixture after every rain to prevent the development of this form of blight.

Directions for Preparing Bordeaux Mixture.

Bluestone, 5 lbs.; quicklime, 5 lbs.; water, 50 gals.

Dissolve the bluestone and slake the the lime in separate barrels. Dilute the bluestone with half or more of the water, then strain in the lime mixed with the remainder of the 50 gallons of water. Use while freshly prepared.

THE POTATO WORM.

The most serious pest in California is the potato worm. The damage to the potato crop in California, as estimated by the writer on a basis of opinions obtained from a large number of growers and dealers, aggregates in some years fully twenty-five per cent.

In one section where some of the finest potatoes are grown, the Salinas Valley, the dealers estimate that at times the loss has gone as high as 40,000 sacks in a single year, and indeed, the potatoes from many sections of the state have to be watched carefully by the dealers to avoid wormy lots. This need of care is because of the fact that a very few wormy potatoes may infect in a few weeks a whole storeroom full of what were originally clear tubers. As the potato is a food product that is expected to retain its value for many months, this possibility of infestation becomes a most serious question.

THE "CHILD OF THE EARTH."

Stenopelmatus, incorrectly called Yellow Ground Cricket, Sand Cricket. Jerusalem Cricket, Common Beetle, and Potato Bug, are frequently noticed in potato fields where the tubers are are bitten into as though mice had been gnawing them. These wounds are quite evident in some specimens and render the tubers attacked unmarketable as a first class product. The insect causing this damage is a large clumsy member of the family to which the katydids belong, and is called in some sections, "Child of the Earth." It has a large and horny head and a soft and heavy abdomen. Its movements are awkward and slow, and its color ranges from yellow to brown. It never has wings. These insects seldom become numerous enough to do any large amount of be yilled wherever found. They can be killed wherever found. They can be trapped by placing bits of board upon the ground in the field. The insects get beneath these boards and may be easily killed there.

Cuthbert Raspberry Plants
$1 per 100, $6 per 1000
Gray's Gardena Dewberry
$1.25 per 100, $8 per 1000
A. E. Nelson, El Monte, Cal.

Seedless Blackberry

The main crop has no seeds. Very early, extra large and very prolific.

Geo. W. Peck, 670 Horton Ave., San Diego, Cal.

FERRY'S SEEDS

Represent the survival of the fittest. We have become the largest seed house in the world because our seeds are better than others. Do you wish to grow the most beautiful flowers and the finest vegetables? Plant the best seeds—Ferry's.

1906 Seed Annual free to all applicants.

D. M. FERRY & CO.,
Detroit, Mich.

Tree Protectors

75c per 100. $5 per 1000.

As valuable in summer against sun-scald, hot winds, etc., as they are in winter against cold and rabbits. Recommended by all leading orchardists and horticultural societies.

Send for samples and testimonials. Do not wait till rabbits and mice ruin your trees. Write us today. Wholesale Nursery Catalogue now ready Write for copy. Agents wanted everywhere.

HART PIONEER NURSERIES
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Try Seeds First, Then Send Money

In order to introduce our seeds as rapidly as possible we will, upon request, send one each of our specially arranged collections of choice vegetable and flower seeds. The quantities are proportioned and selected to give a continuous supply of flowers and vegetables of high quality throughout the season to those who do not care to wade through long catalog lists. So certain are we that they will give satisfaction, that we will send our collection of flowers, 14 varieties, and our vegetable list, 14 sorts, for $1.00, and wait for our pay until you have tested the seeds and proven to your own satisfaction that they will germinate and produce the results we claim. If they are not first-class you do not send us a cent, if they "make good" June 1, send the dollar.

You know we could not do business on such liberal terms if our seeds were not as represented. They are guaranteed true to name and the seed grown. Remember, we require no money in advance. Order today, using coupon below, and you will say it was one of the most profitable dollars you ever spent.

F. Gilman Taylor Seed Co.,
Box 27, Glendale, Cal.

Please send me prepaid one each of your vegetable flower collection, If they grow satisfactorily, I will pay you $1.00 on June 1st, 1906. If not satisfactory, it is understood that I am to be at no expense whatever.
[Write plainly.]

Name ....
Address ....
State ....

Strawberry Guavas 3 years old, 2 to 3 feet, high, very straight. Balled and sacked and in most excellent condition. Price packed F. O. B. $20 per 100

TIM CARROLL, Anaheim, California.

Wagners Citrus Tree Nursery **The Ever Reliable**

Strong, high-grade, well-grown stock of Valencia, Washington Navel, Imported Navel and other standard varieties of citrus trees. Also deciduous trees, grape vines, etc. Prices Reasonable.

Burbank's Crimson Winter Rhubarb one of our specialties. $1.50 per doz., $7.50 per 100, $50 per 1000.

Wagner's Nursery **Phones: Home, 1291; Sunset, 1297** **Pasadena, Cal.**

JAPANESE HONEYSUCKLE

This Floral Wonder will Transform an Old Shed into a Beautiful Fairy Bower

The Japanese Honeysuckle is a sturdy, rapid climber and within a few months after it is planted will drape your piazza with a brilliant mantle of green, luxuriantly spotted with beautiful white flowers, turning to yellow.

The Honeysuckle grows rapidly—is cleanly—requires no tying. It will twine itself around any support within its clinging reach.

Its presence will add to the value of your property and to your pride in your home.

Its fragrance is matchless. One plant, when in bloom, scents the air with a subtle odor as sweet and lingering as the rarest Oriental perfume.

Matchless Fragrance

The plant is a genuine floral wonder. Its thriftiness, hardiness and prodigal bloom speaks volumes for the skill and plant-loving proclivities of the little brown people of the Occident who have nurtured and improved this climber for so many years. We have imported a large number of these parent vines from Japan. They take root in this country as readily as they do in the native clime. If you are fond of beautiful climbers and appreciate something in plants decidedly bizarre and out of the ordinary, try some Japanese Honeysuckle on your porches and fences. You'll be charmed to see how beautiful this plant will make an ugly old fence or shed appear.

Makes Hideous Places Beautiful

If you have an ugly fence or unsightly outbuilding, plant a Japanese Honeysuckle and within a few weeks you will witness a fairy transformation scene as wonderful as any depicted in Arabian Nights.

We will send you a healthy, thrifty Honeysuckle root for 25c that will bloom all summer and cover a twelve foot arbor.

Ivy Collection—No garden is complete without Ivy. We have a fine stock of healthy roots. The old favorites—Boston Ivy—English Ivy—Kenilworth Ivy—and Variegated Ivy—are 25c per root or the set of four for 50c.

Climber Collection—We will send you this whole collection of seven climber roots postpaid for $1.00. Japanese Honeysuckle—Kenilworth Ivy—English Ivy—Trumpet Creeper—Japanese Hop—Virginia Creeper—Boston Ivy.

Our shipments are all packed with extreme care. All roots are imbedded in moss and the tops protected with wood wool. We have shipped roots packed in the Lilly way from Seattle to New York and they were in perfect condition after their long trip.

Order now. Be the first to have the Japanese Honeysuckle in your neighborhood.

Japanese Honeysuckle Roots
25c each, 3 for 50c

Tear this off, mail to

CHAS. H. LILLY CO.
Seattle

Enclosed is $______________ (in money order, draft, 2c stamps) for which send me (prepaid) items as checked below.

__________Japanese Honeysuckle Roots

__________Ivy Collections

__________Climber Collections

Please send me (free postpaid) your Plant and Seed Catalog

Name ________________________________
Address ________________________________ R-1

CALIFORNIA CULTIVATOR

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FRANK HONEYWELL, BUSINESS MANAGER

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Friday, March 23, 1906

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Now the Roads.—This is the time to do the work of the season on the roads. When the rains come several days apart, the surface of the ground is soft and pliable and may be worked to advantage with less effort than any time in the year. When the ground is damp, but not muddy, dirt will work easily and adjust itself to chuck holes more readily than in a month after the last rains have fallen.

The immediate interest of rural districts in the good roads question centers in the practical plans for making the roads as good as possible without the addition of imported material. This applies, especially, to regions where there is no material for surfacing without the expense of shipping in. With no material at hand, it will be necessarily a long time before any, with the exception of the main traveled roads, can be treated. While the building of permanent roads should be carried on as fast as possible, anything that can be done to improve the condition of our other roads will become a great blessing.

The Cultivator has heretofore spoken of a simple device in road-making which ought to be employed in every road district in California, at this time. It is not a road builder, but a road repairer, and its use in so many rural districts in the middle West has proved its efficiency in this direction.

The King road drag for maintaining dirt roads, is proving a blessing to rural districts of the west with the addition of drainage and the use of county graders. Thousands of miles of country roads in the central west will be maintained this year in splendid condition, through the use of the King road drag. The drag is easily and cheaply made at a cost not to exceed $2.00. A beginning could be made by our readers, this spring, by maintaining in first class condition the dirt roads adjoining their farms. Why not take the initiative and start the movement at once?

Why not try the experiment? Do it now, and a little later write the Cultivator the result of your effort. We guarantee a success if the King drag is used.

* * *

Susan B. Anthony.—During the week there has passed from earthly activity one of the strongest characters of the age.

Susan B. Anthony was a distinct representative of remarkable devotion to a cause she loved and believed to be right. Love of freedom was the keynote of her existence. She believed in freedom for all people regardless of sex, color or previous condition of servitude. She was an abolitionist when it required sublime courage to confess the faith. In the strength and vitality of her young womanhood she espoused the cause of the black man. In the days of the anti-slavery movement she was a leading spirit. Undaunted by determined opposition she advocated the freedom of the slave because she believed in it. In company of William Lloyd Garrison she created a riot at Buffalo. Egged and burned in effigy in Syracuse, she journeyed to Jamestown where her reception was no less strenuous and bitter.

During the dark days of the civil war her voice was raised in continuous pleading with the people of the North to support Abraham Lincoln and the Union—without slavery. Henry Ward Beecher pronounced her the Joan of Arc of the cause of American freedom.

But there was another class for whom she demanded emancipation before the bar of public opinion—the emancipation of her own sex. So long as woman was deprived of any right which man was permitted to enjoy in matters of government, so long did Susan B. Anthony regard her sisters as the victims of cruel bondage.

In her notable career Miss Anthony frequently manifested that intolerance which those en rapport with a particular cause are wont to feel toward those who are less enthusiastic or entertain divergent views. This characteristic, however, did not seem to lessen the respect which the public felt for Miss Anthony. She had been for so many years the most commanding figure in an earnest group that men and women everywhere were glad to pay her tribute of their admiration.

Susan B. Anthony passed through many notable periods of our national history—not merely as an unconspicuous observer, but as a participant capable of commanding a hearing. She did not live to see the triumph of the particular reforms which she most earnestly desired but she did live to see recognition of the rights of her sex in wise laws for the protection of heir rights adopted in practically every state in the Union, and their entrance into and splendid success in fields of effort which seemed impossible a half century ago.

* * *

Pardon for Packers.—The appearance of Attorney-General Moody in he Federal Court at Chicago this week strenuously advocating the punishment of the violators of the anti-trust laws, marks an epoch in legal action with few parallels in our national jurisprudence. But the Attorney-General justifies his act on the ground that a great public wrong has been committed, that the people have been robbed, and that individuals who committed the wrong are the ones to suffer punishment, not corporated bodies.

The packers have been among the most flagrant offenders against the law. They have stolen millions from the people and when the Inter State Commission attempted to restrain them . they simply ignored this authority and brazenly declared "what are you going to do about it?"

Now that conviction has over-taken them they are pleading for light sentences. The court should pay no attention to their appeals. The maximum penalty should be imposed, not in a spirit of revenge. of course, but as a salutory warning to all like offenders, that the laws of the land must be enforced Let the strong bear their burden of punishment, for broken laws. in the same ratio as the weak to the end that justice may be meted out to all alike.

It is to be hoped the court may see the virtue of the Attorney-General's contention and affix punishment to individuals, not their corporations, that the country may understand the courts are for good government. and for the impartial administration of its laws, irrespective of the man or men, who would seek to overide them.

* * *

State Board of Trade Report.—The annual report of the State Board of Trade for 1905 has been published. The report contains the information that the fruit industry of the State considered in all its bearings, stands first in importance to the State. Some of the figures taken from the report are as follows:

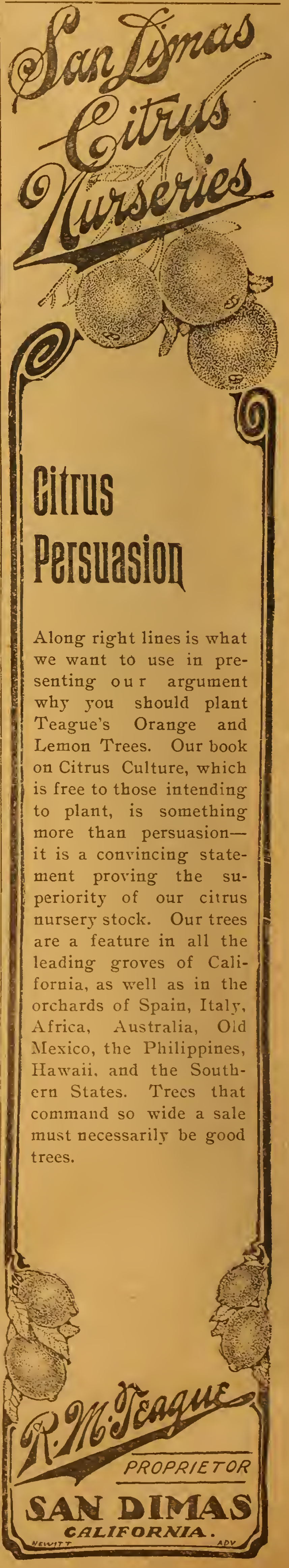
"The fruit shipped out of the State in 1905 amounted to 99,410 carloads of ten tons each. The shipments of fresh fruit in 1905 exceeded the total for any previous year by 1500 carloads. The shipments of citrus fruits amount to 454,083 tons or 45,408 carloads of ten tons each, or 8840 carloads more than all the other fruits and nuts in all forms combined.

"Citrus fruit growing is not spreading in Northern and Central California as rapidly as conditions in that part of the State would warrant. In 1904 the shipments thence were 2216 carloads. Of course where this number is produced a greater number may be. Citrus fruit growing has given Southern California great prestige, and deservedly so, and has added enormously to its material growth and wealth.

"The raisin industry has not perceptibly increased in recent years. The largest crop was in 1904, amounting to 53,134 tons or 5313 carloads. The crop fell off to 3263 carloads in 1905. The center of the industry is in Fresno county. The product of almonds and walnuts has not been increased much since 1899. Shipments of canned fruits since 1890 have more than doubled, reaching 9188 carloads in 1905. The wine and brandy sales throughout the State have been increased from 4765 carloads in 1891 to 10.642 in 1905.

"The table of gain and loss for 1905 compared with 1904 shows a net gain of 7357 carloads. The gains in carloads were as follows: Fresh deciduous fruits, 4110; citrus, 6833; canned, 580; vegetables, 1539; wine and brandy, 493. The losses were as follows: Dried fruits, 3829; raisins, 3150; nuts, 220.

"The butter output of the State increased 6,324,128 pounds in 1905. The revolutionizing influence of irrigation upon dairy industry was illustrated by tables showing the increase by pounds in the butter output of dairies, in irrigated counties, from 1900 to 1905, to be as follows: Fresno from 601.681 to 2,166,048; Kern from 129.848 to 323,363; Kings from 258,750 to 1,444,218; Merced from 623.608 to 1,786,082; Sacramento from 742,443 to 1,578,751; San Joaquin from 506,047 to 1,468,991; Stanislaus from 423,185 to 2,006,171; Yolo from 533,525 to 1,124,907. These eight counties show a growth in five years of 211 per cent., an annual average of 40 per cent. The total value of the dairy output of the State in 1905 was $21,572,902. All the leading industries of the State were considered statistically." The report sharply critizes the counties in California that do not co-operate with the Board. About half the counties show great activity and the other half only passive interest.



San Dimas Citrus Nurseries

Citrus Persuasion

Along right lines is what we want to use in presenting our argument why you should plant Teague's Orange and Lemon Trees. Our book on Citrus Culture, which is free to those intending to plant, is something more than persuasion—it is a convincing statement proving the superiority of our citrus nursery stock. Our trees are a feature in all the leading groves of California, as well as in the orchards of Spain, Italy, Africa, Australia, Old Mexico, the Philippines, Hawaii, and the Southern States. Trees that command so wide a sale must necessarily be good trees.

R. M. Teague
PROPRIETOR
SAN DIMAS
CALIFORNIA.

NEWS OF COUNTRY LIFE IN THE GOLDEN WEST

HORTICULTURE.

Oak Glen apples are selling for $80 per ton.

An 80-acre prune orchard near Santa Clara has been sold for $50,000.

The warm weather has caused buds on the deciduous fruit trees in the southern part of California to swell.

E. J. Oatman of Highgrove claims to have originated a new variety of the orange which is of superior quality.

Ten carloads of oranges were shipped from Orange depot during the week ending last evening.—Orange News.

The Southern Pacific now has over 2,200 fruit refrigerator cars on side tracks in California ready for orange shipments.

The members of the Covina Orange Growers' Association received last week over $35,000 in partial returns for January shipments.

About 100 vineyardists and prospective vineyardists of Ukiah and vicinity have organized the Viticultural Society of Mendocino county.

Harry H. Ford of Redlands will set out 30 acres of orange trees this spring. Half will be Washington navels and the rest Valencias.

The Penn Fruit Company has made a fine orange display at the Riverside Chamber of Commerce, which greatly interests Eastern tourists.

Professor Waite and the Government pear-blight experts have finished their crusade, and there is nothing more to be done until next season.

The fruit companies at Covina have been packing and shipping oranges for the past three months, but only about one-fourth the crop has been shipped.

Orange growers about Sierra Madre are suffering from orange thieves. Their lawless depredations are becoming a great annoyance to all orange growers.

Orange shippers at Redlands are looking forward with interest to a trial of the bushel-basket system of shipping oranges, arrangements for such a test now being under way.—Upland News.

Actual returns from all citrus fruit sold this year have averaged to date $650 a car, against $500 a car for all of last year and $400 a car for the preceding year. These figures are for fruit on the cars in California.—Upland News.

The Hanford Sentinel says: "Although it is somewhat early in the season to talk of the price of raisins. some growers have already contracted their coming crop at good prices, which are understood to be in the neighborhood of $65 per ton.

Professor Waite of the United States Department of Agriculture, who recently came from Washington D. C., to give assistance in fighting the pear blight, is delivering many lectures in the Sacramento valley on the best method of wiping out this pest.

A large dried fruit packing house at Yuba City, Sutter county, commenced last month the filling of an order for Eastern shipment and about 100 women were put to work packing the fruit in fancy packages. The order includes several carloads.—Sacramento Bee.

Last week the Upland Citrus Association paid its members $15,905.38, being the amount for their February pool. This week the West Ontario Association paid its members $5,914.13. for their February oranges, making over $21,000 distributed among the members the past few days.—Record.

A Sacramento telegram says: "Exceedingly large yields of all fruit crops with the exception of apricots. are looked for this season, and the shipments should be equal to those of last year, when 8,000 cars of deciduous fruit were sent east, the greatest season in the history of the State. Apricots will yield only about a quarter of a crop, as the rains were too late in the fall. Those trees under irrigation, however, will produce good crops. Peaches, plums and prunes promise well. The pears this year should be of excellent quality and not disfigured with scabs, as was the case last year. Should future rains not wash the pollen from the cherry blossoms there will also be a satisfactory yield of that fruit. Of the citrus fruit all the navel oranges have been shipped from this part of the state, while Southern California is just beginning to forward its shipments to the Eastern markets.

AGRICULTURE.

Articles of incorporation of the Tulare Beet Growers Company were filed last week.

The Desert Grain Company shipped 10 cars of grain from the local warehouse to Tucson during the past week.

The soil, climate and water of Imperial seem especially fitted to give the very best results in asparagus growing

The cabbage shipping season is on in Orange county; from 5 to 10 carloads a day are shipped from about Fullerton.

As a gigantic industry, sugar beet raising is said to offer unusual advantages in Mexico, on account of the possibility of raising successive crops, regardless of seasons.

The Pacific Coast Steamship's steamer took 500 sacks lima beans, 100 boxes oranges and 1500 pounds miscellaneous freight from port for San Francisco on Friday last.

The Mesa Arizona Cantaloupe Association has agreed to plant 500 acres in cantaloupes this season, from which 150 carloads should be shipped, as last season 52 carloads were shipped from 150 acres.

An industry which is being viewed with concern by the sugar-beet companies in the United States is to be established in Mexico. Three million dollars in gold will be invested in an enormous sugar beet plant.

The express shipments for the week from Escondido were 184 cases eggs, 1,063 pounds of butter, 2,520 pounds of chickens and 1,830 of cream. The volume of cream and eggs was the highest for the Season.—Times.

The California Vegetable Union shipped the first carload of cabbage from district for the season of 1906, Tuesday, from the packing house at Olive. The price of the carload shipped from Olive was $18 per ton.—Fullerton News.

Believing that an over-production of hops is responsible for low prices that have prevailed during the past two years, half a dozen of the most prominent growers are preparing to agitate a reduction of acreage, applicable to all hop growing sections of the State.

The cantaloupe business at Brawley is assuming large proportions. The supplies the present season will include 10,000 crates or enough to fill 275 cars and 4,000,000 paper wrappers. The wrappers will weigh 37,000 pounds or enough for a carload. In addition 100,000 handsome lithographed labels will be purchased, with a new design for the Asociation.

Within the past few months. or since the project was first broached of building an Oxnard sugar plant at Orlando, the population in the immediate vicinity of Orlando has been increased by nearly 2000 men, women and children. Before the first crop is harvested and by the time the plant is ready to operate this number will be increased to 5000 people. So says the Courier.

At Hamilton, an immense sugar factory is building which will be up-to-date in every particular, and with every known device for economical work. The company has bought about 10,000 acres of the finest beet land in the country, here they are installing a most perfect system of irrigation, and have established a high-class agricultural department, with five well recognized agriculturists under the supervision of one agriculturist in chief, whose duty it is to give to all farmers under contract to grow beets free tuition. not only as to beet culture, but in anything relative to the tilling of the soil or the welfare of the farmer.

MISCELLANEOUS.

Tulare is arranging for a May festival.

Visalia has had the worst flood since 1862.

The city council of Modesto has levied a license tax on cats.

Sanger will celebrate May Day, which is the 18th birthday of that city.

On Saturday the rushing waters of the San Jacinto river were heard four miles.

Hollywood is to have a $10,000 public library the gift of Andrew Carnegie.

Pasadena propeses to buy, own and operate a lighting plant for the city and people.

Carnegie has offered to give $10,000 to Oxnard toward the establishing of a public library.

San Diego is to try the gasoline motor car on its street car lines instead of electricity.

Two children in Escondido, aged 6 and 4 years died last week from eating supposed mushrooms.

The town of El Centro is beginning to loom up on the southern horizon as a would-be rival to Imperial.

Oceanside has put down over two and one-half miles of cement sidewalks in the past eighteen months.

Porterville has just organized a live improvement association. looking to street planting and the embellishment of their High School grounds.

A bright and interesting journal has been started by the student body of the California Polytechnic School, San Luis Obispo.

The Southern Pacific road is building in from Orland to Hamilton, and expects to have its trains running into Hamilton within ten days.

There is to be a twelve foot tunnel from Alameda county under San Francisco Bay, to the shores of the peninsula for the great water pipe.

The sixteenth annual convention of the Southern California State Sunday School Association will be held at Los Angeles, April 17 to 19. 1906.

Visalia, the county seat of Tulare, is manifesting a most laudable enthusiasm in the matter of securing her share of homeseekers and investors.

A Corona tailor who last week ran a livery team almost all the way from Corona to Riverside and was arrested on the charge of cruelty to animals was fined $50.

LINER ADVERTISING

Advertisements in Liner Column will be charged 1¼ cents per word. No advertisement taken for less than 25 cents. Eight words to a line.

LINERS

FOR SALE—INDIAN RUNNER DUCKS, $6 per doz., eight to ten weeks old. C. H. Goodacre, Compton, Cal.

MAMMOUTH PEKIN DUCK EGGS, FINE Strain, 13 for 75c. Miss Wood, 130 Carey St., near Arroyo Drive, Pasadena, Cal.

FOR SALE—14 STANDS OF BEES IN Standard hives, Hoffman frames, in good condition, by Peter Veilex, La Canyada, Cal.

ANCONA EGGS (FROM PERPETUAL EGG Machines), imported and domestic matings, $2, $3.50 and $5.00. L. L. Viereck, Pres. Ancona Club, Albany, Oregon.

BLUE ANDALUSIN Eggs FOR HATCHING fron thoronghbred stock. None better. Eggs fertle, $1.00 per 14, $6.00 per 100. Oakdale Ranch Fallbrook, Cal.

BLUE ANDALUSIAN EGGS FOR HATCHING, from three noted strains, $2.50 and $3. Incubator lots $7.50 to $15.00 per 100. Mrs. T. R. Griffith, 3111 Walton avenue, Los Angeles.

WANTED—SITUATION BY MARRIED man who understands culture of deciduous and citrus fruits. Good horseman, pruner and irrigator. Address "Orchardist." Care of Cultivator.

FOR SALE—WHITE MINORCAS EGGS $1.50 sitting from one of the nicest pens of Wh. Minorcas in Southern California. Lay the most eggs and the largest-whitest eggs of any breed. Call and see them at 547 W 54 St., or address 1004 E. 9th St. Also incubator chicks for sale.

ELDORADO CONSOLIDATED MINES. Forty-one claims, situated north of Indio, Riverside Co., Cal. Very promising. I have examined them and know of nothing beatter for investment in the State The company is well organized and is vighrously pushing the work of development. Rich ore and much of it. A limited number of shares are offered at most reasonable figures. As geologist and mine examiner. I have had large experience in mining matters. It will pay to look into. Address for particulars, DR. STEPHEN BOWERS, Secretary and Treasurer, 1135 Dewey ave., Los Angeles.

Edison Phonographs and Records at factory prices, delivered free anywhere on receipt of full retail price; largest stock of Edison records west of Rockies; send for circulars. Peter Bacigalupi, 786 Mission St. San Francisco

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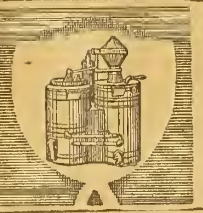

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Live Stock and the Dairy

BY MRS. MINNA E. SHERMAN, FRESNO, CAL.

MORE COW

When cows have been bred and fed for the highest milk production, for a few generations, they become so milky that it is not uncommon to have a heifer come into milk several months before she has her first calf. The udder develops and the milk veins fill with blood and a general developing of milk capacity takes place. The heifer suffers severely; when we were confronted with this proposition, at first we hesitated to milk, as it seemed against nature, but after one severe experience it has become our practice to milk whenever there is a secretion of milk that is sufficient to be troublesome to the heifer or cow.

The first case we had was a heifer, and she was not milked, but the feed was reduced to hay and a little grain, watching that the secretions were not checked. The Veterinarian ordered saltpetre and Epsom salts to help eliminations by the bowels and kidneys. After a week the swelling increased until a great mass of soft tissue was hanging from the region of the navel. The Veterinary then lanced it, nearly a five gallon can of serum escaped. The heifer collapsed and nearly died. She was promptly stimulated with whisky, milk and eggs. Nearly a gallon of hot milk was given to supply fluids to the system, and she was wrapped up in a warm blanket in a warm box stall. In twenty-four hours she was on her feet, and calved the next day as the result of the shock. The calf was tiny and without hair. so the then head milker made it a little coat by sewing it up in the leg of a pair of cloth pants, and it wore that little brown coat until its hair grew. A nursing bottle was provided and at night the calf was put to bed in a box of blankets at the foot of the tender's own bed. "Baby" made a good cow herself and I believe is still useful to her owner.

But to return to 501. The heifer struggled along without coming to her full milk flow and was fed all she could digest, mosty silage, as grain she did not care to consume. Sometimes a little bran was acceptable, but as a rule she would not touch it, as she craved cooling foods. At first very thin, the cow gradually gained in condition, yet her butter record for that first year was not kept, as her milk was not used. I feel sure it would have fallen under two hundred pounds, as the milk was scanty and the butter fat very low. But the cow was building herself out of the feed, for even when a cow is in perfect physical condition, it takes from sixty to seventy-five per cent of her food for the maintenance of herself, according to the amount of dairy inheritance she has behind her. A cow in the condition of "501" may be expected to put at least ninety per cent of her food on her back. The milking was, therefore, only kept up to relieve the udder and to prevent a recurrence of the formation of watery serum, for when a thing like that occurs once it is liable to come back again, so that by giving this cow succulent food and supplying the water needed she gained as rapidly as she could without a risk of relapse.

When "501" had her second calf she was ready to work and made 361 pounds of butter and has remained hale and hearty ever since.

The next heifer whose udder was found to require milking out, four months before calving time, was "591." I had her lightly milked once a day, hoping to shrink the milk so she would again go dry, but it failed so she milked right along until she calved at full time, dropping a healthy calf. Then as soon as it was safe she was fed grain right along and made that year 366 pounds of butter. In seven years this cow has never been dry. I know it seems to many people cruel, yet I have never been able to dry off a cow that was giving four gallons of milk a day successfully, and this cow never comes below thirty seven pounds.

I have, during my first experience, with cows forcibly dried them off by starving and by using camphor on the udder, always to have trouble with inflammation of the udder and often with the loss of a portion of it. I stopped it then, and have not had three teated cows since in any numbers. I am not at all prepared to say that if I was personally milking the cows I could not dry them off myself, but I know from bitter experience that I have caused financial loss and worse, great suffering to the helpless cows by ignorant persistence in trying to dry off a secretion that had been cultivated by breeding and feeding for generations. Nature has always more than one law; we often forget that; saying that Nature dries off a cow and therefore she intends we should follow her example, and so Nature did, before we tampered with her, and educated the cow to great production, then failed to recognize that Nature has a second law that secretions and eliminations must be removed, or we have the body self-poisoned, or as the physicians say, auto-infected. It is this that causes the terrible convulsions of Bright's disease in the human family. To return to the cow "591." She was liberally fed and never thin at any time and has always seemed to be absolutely well.

Another heifer that came fresh in the same way, three months before calving was "633." It was determined to dry her off at all hazards. She was milked leaving always a little behind, taken from the pasture and fed hay, the udder rubbed with camphor. Five weeks before calving she was completely dry, but thinner than a cow should be to freshen satisfactorily. She came in with a scanty supply of milk and never gave over a gallon at a milking. I kept her and fed her well, but it was useless. With the second calf she gave only four gallons a day, making less than seven pounds of butter a week so she was made into beef. Now this last was a full blood out of a dam having an official record of over eighteen pounds of butter a week and has also three advanced registry sisters—expensive beef.

Since that time I have had nearly every year, two or three springing heifers to milk. Sometimes these go dry naturally, if they do all right. They are fed a simple grain ration without oil cake meal and allowed half ration of silage. They are not forced, nor are they starved, but Nature is simply helped to do her best by them. The Holstein and Durham have both given these springing heifers and I have not in my limited experience with Jerseys had them do so. I presume that any breed which gives quality milk, rather than quantity, would be less liable to have these troubles. I realize that it is dangerous to mention breeds and will not do so, as some are so rabid about the matter. I am often amused at this strife for, after all, there are wonderful cows in every breed and it is more a matter of the man who handles them than the breed. Take the Brown Swiss in California, they have not been fortunate so far in their owners who have failed to show them up as they should and will not be able to do so until the price comes down to a reasonable basis. When they have the chance of falling into the hands of practical dairymen with the vigor they possess, they should show up well in the front rank as economical producers of butter fat.

A HORSE PARASITE.

The Kansas State veterinarian reports outbreaks of a trouble in horses in different parts of the state, caused by the palisade worm (Stronglyus armatus.) Each outbreak caused a loss to the owner of nearly a thousand dollars. From the fact that the trouble does not always manifest itself in the same way, it frequently puzzles the local veterinarians for some time. This worm may be found in any part of the body. Its natural habitat, however, when full grown is in the intestinal canal, usually the large bowel. In its immature state it migrates into the blood vessels, sometimes causing rupture of a large vessel or obstructon of the flow of blood and in this way has lodged in the arteries of the brain, causing the animal to show brain trouble. Again it has obstructed an artery leading to a portion of the intestine, causing some of the most serious cases of colic, impaction. paralysis of the bowel, and frequently death. Being located in different organs, the symptoms are different in different horses. The life-history of this little worm is interesting. It passes the greater portion of its life in the in-

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testine of the horse; a part of it possibly in the arteries;another portion in the outer world. Here it may be found in stagnant water, in meadows, in any damp place. If there is sufficient moisture present and the temperature not too cold, it may live for months. In dry weather or in absence of sufficient moisture, the parasite soon dies. The source of infection in the horse, it may therefore be seen, is stagnant drinking water, moist pastures or green fodder.

Advertising Column for Members
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RING BONE.

Editor Cultivator.—Could you give me a good receipt for curing the ring bone on a horse. Valuable animal. I would be very thankful to you. C. N. R., Winters, Cal.

The ring bone is a deposit of new bone around the short bones between the hoof and the fetlock. It starts as an inflammation of the periosteum (skin around a bone), and the continued inflammation results in the formation of the new bone between the old bone and the periosteum. In bad cases the inflammation extends into the bone and often into the joint, in which case the growth of new bone is so close to or in the joint proper that it is impossible to cure the lameness except by cutting the nerves running to the foot so as to remove all sensation. Ring bones are caused by sprains, injuries, etc., and often by working colts too hard before their bones have matured. Heredity also plays a large part in this kind of disease. While no colts are born with ring bones, colts from mares or sires that are affected with ring bones or that have weak, poorly formed pasterns, are very apt to be foaled with weak bones in these parts, that will become affected under conditions that would not affect a colt with good strong pastern bones. The growth of a ring bone can usually be killed by heavy blistering, or still better, by firing. But where the growth is large or the joint is affected this will not remove the lameness. If the growth has been checked by the firing or blistering and the animal still goes lame, the only thing that will stop the lameness is to cut the nerves leading to the foot. This is a delicate operation and needs a qualified veterinarian to perform it. A good blister for a ring bone is made by mixing 6 drams of red iodide of mercury in 2 ounces of cantharides cerate; clip the hair and wash the parts thoroughly with soap and water; then rub the blister in well. Leave on until the parts are well blistered; then wash off and oil with fresh lard. After the effects of the first blister have recovered, apply again. Tie the animal so it can not bite the parts and allow it to rest in the barn six or eight weeks. There is no use trying to kill ring bone while the animal is at work or running in the pasture.

THE COW AT CALVING TIME.

When the cows are kept on dry feed a feverish condition is often present, and this is highly unfavorable to a satisfactory outcome at calving time. Inflamed udders and milk fever result from this condition. The excrement is always a token of the physical condition of an animal, and in order to be best prepared for a successful parturition the bowels should be in a lax condition. Oil meal or bran always has the desired effect and no one who has pregnant animals should be without these food by-products for use before and after-delivery.

* * *

If milk fever is threatened or if there is an unusual preparation for milk production, it is wise to give the cow small doses of salts—epsom or glauber—say an ounce daily. This method is preferable to giving a pound dose at one time, as often recommended. If the udder is unduly inflamed, we can safely suggest the use of aconite tincture in twenty drop doses two or three time a day. Bathing the udder with ammonia is also useful in cases of inflamed udder. But we have seldom failed with the aconite if administered when first symptoms of inflammation appears. It is given as a drench or a bran-mash; which is fever allaying of itself.

* * *

A hearty condition of the cow at calving time is the best assurance that she will "do well" afterward. A failure to expel the after-birth is due to weakness, either from prolonged labor or lack of vitality to withstand the strain upon her system. The after-birth must be removed by force if necessary or bad results will follow. If there is reason to suspect that everything is not progressing satisfactorily, give the cow a pailful of dry oats. Do this at once after calving and the outcome will prove the efficacy of this remedy. Under intelligent, liberal feeding, this trouble rarely comes, but where cows are allowed to become thin there is much complaint that cows are not doing well. Good care, like charity, will cover a multitude of sins—of omission.—Farm Stock and Home.

DISPOSITIONS OF COWS

Cows differ as much in their dispositions as human beings. Any farmer that has handled a large number of cows will have run across the stubborn cow, the affectionate cow, the motherly cow, even the bossy cow. Some of these qualities are good and some are bad. A man should try to eliminate the bad qualities and encourage the development of the good ones in the selection of the cows for the continuation of his herd.

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A remarkable record in longevity and reproductiveness of a Shetland mare comes from the famous Woodburn farm in Kentucky, known the world over in times past as a nursery of thoroughbred and trotting horses. The Shetland pony Belle foaled last year a black colt when she was 30 years old. It was small but managed to live nearly a month.

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Profit in the Poultry Yard

BY MRS. A. BASLEY, [illegible]

THOROUGHBRED VS MONGREL

I have a letter, just received, from one of our readers, saying, amongst other kind words, "your article on breeding was just what I have been looking for, and if it be not asking too wuch of you, would like the benefit of your experience." The questions that follow are many and will be best answered by my quoting from an article which I read some years ago from Farm, Garden and Poultry.

In discussing the assertion by Mr. M. K. Boyer, that if a pure breed of hens be allowed to associate, in ever so short a time with a mongrel cock, the ability of such hens to breed pure blooded stock is forever destroyed. However pure the blood or subsequent cocks may be, that associate with those hens, their progeny will be mongrel. If this is a fact, there must be a law of nature producing it, that should be understood and the mystery explained. That it is a fact, observation by careful breeders of pure stock proves.

* * *

Mystery is but another word for ignorance. As man learns nature's laws, mysteries are solved and disappear from the mind. There are no phenomenons but have a cause. The principle underlying the above stated phenomenon is a very important one and should be understood by all breeders of pure stock of any kind.

The law involved is not confined to fowls, but is universal with all life. The young mare whose first foal is a mule, will always thereafter mark her foals, although subsequently bred to the most perfect stallions, with characteristics of the ass. If bred to a quagga, she will always mark her progeny, though bred afterwards to a stallion, after the quagga. The stripes of the quagga will appear on all her progeny. This law of the animal world pertains the same to the human species. The woman who gives birth to a colored child will always mark her subsequent children, though by a white father, by the former colored parent. To illustrate this law under consideration. All understand that the blood of the mother circulates through the child while in embryo, and from the child through the mother. The blood thus is charged magnetically, by the action of the life forces of the embdyo, and becomes like the embryo in a degree. This subtle fluid dominates and impresses it's forces upon the whole physical nature of the mother. This magnetic fluid is composed of the ethers of the impregnating principle, which are the central life forces, transmitted to the embryo by the father. The blood and the magnetic forces of the mother become affinitized to these and become a part of her physical being, and, therefore are as lasting as her physical life. They may be modified in after life but never fully eradicated.

* * *

The deepseated ethics imparted by the male, dominate in giving character to the progeny, and through the progeny—embryo—changes the nature of the female to a degree hardly dreamed of by the common mind. Many observers have noticed the change of features, expression and even character of the wife to that of the husband when harmoniously mated, and their magnetic natures agree. The wife in such cases grows into the likeness of her husband. He is the positive element dominating physically, while she is the negative and receptive element and therefore takes of his nature more than he does of hers.

The breeder of cattle has learned that the male soon changes the whole herd into his likeness, but this is usually wholly attributed to his influence on the progeny, and no account has been taken of the change produced in the mothers from the principle illustrated above, which is an important cause of the rapid change of the herd. The long-horned, lanky Texas cattle have nearly disappeared from the great plains of the Southwest, because of the selection of short-horned males for the long-horned herds, and it has taken but a fe wgenerations to change the form and character of these longhorned cattle into apparently nearly pure blooded short horns. A part of this rapid change in these herds may well be attributed to the change in the nature of the mothers, by their association with these blooded males.

* * *

No apply this law to the hen. The same law pertains to all. There is a preponderating influence of the male on the progeny as great as in any other animal. By associating a pure blooded hen with the scrub cock, she, by this law, takes of his magnetic nature, and this lower magnetism becomes a part of her life force, and thus changes her nature and renders her incapable of imparting her former nature to her progeny.

It may be thought that the example of the circulation of the blood through the embryo and mother of placental animals would not apply to the egg-laying animals. Remember, it is not the blood, but the magnetic elements that pervade and it might be added, impel the circulation of the blood, the mangetic influence is the force causing the phenomena under discussion. This force is primary, lying at the very center of physical organization and activity in the non-animal as well as in the animal world.

A good example of this is the arc light. Two carbons (one conducting the positive and the other the negative magnetic electric currents) are brought sufficiently near each other to permit of the passing of these currents from one to the other through the intervening air. The air resists their passage and becomes heated by the rapidly moving currents of electricity to incandescence. The carbons melt and throw off particles that become incandescent, and pass over this airspace, the positive carbon to the negative, and the negative current those from the negative carbon to the positive one: but the positive current carries far more carbon to the negative one than the negative one to the positive, and therefore the positive carbon is much quicker consumed. The positive is the stronger, while the negative is the more receptive force. This is fundamental in nature everywhere. In life these forces are embodied in the sexes, the male is the positive and the female the negative forces. It is one law in all foration, animate and inanimate and is fundamental in all activities. The two must always act together to produce any effect or activity. The positive is always the stronger.

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will assist you in making money. Any responsible person can get a genuine **Chatham** and have SIX NONTHS TO PAY FOR IT—what is the use of you paying out money for an Incubator when you can make it pay over and over again for itself?

I can give you hundreds of testimonials from customers all over the Coast who purchased Chatham Incubators and Brooders last season on our **ON TIME PLAN**, and are thoroughly satisfied with them. The manufacturers fully guarantee every machine. Write me for our catalogue and some useful hints on poultry raising—it will be mailed to you free.

Geo. W. Foott, Box 2040, Portland, Ore.

SAN FERNANDO MISSION

Mission View Poultry Ranch

Largest Breeder of WHITE WYANDOTTES on the Pacific Coast

¼ Wild Mammouth Bronze Turkeys.

1906 Winnings 32 Prizes Write for Circular Clear Eggs Replaced

MRS. C. D. HUBBARD,

Box 282 San Fernando, Cal.

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK

BUYS THE WORLD'S FAMOUS EGG FOOD NO. 4

MIDLAND

IF YOU WANT EGGS
YOU WILL FEED NO OTHER

Used by all the largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the GOLD MEDAL at the St. Louis World's Fair for greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1604.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A FILCHER, Commissioner.

And Now Comes New Reward for Merit:

Read the following telegram received from the Lewis & Clark Exposition at Portland:

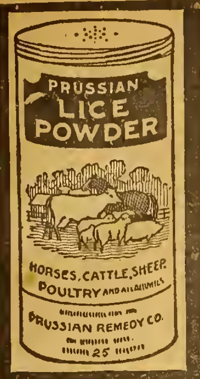
"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

PETALUMA INCUBATOR CO.

Main Office and Factory, Petaluma, Cal., Box F. Los Angeles, 505 South Main Street
San Francisco Office and Salesroom, 33 Market St.

When writing to Advertisers Please mention Cultivator



KILLS LICE on POULTRY!
Cattle, Hogs, Sheep, Etc.
Easy to apply—dust it on.

"Rids calves of Lice"—C. Voss, Armour, S. D.
"Killed every louse in my flock of 250 hens"—D. Perry, Monroe, Wis.

Price, 25 and 50c a Pkg.
By Mail, 40 and 70c.

Prussian Stock Food and Remedy Co, St Paul, Min

SHADE'S Rhode Island . . . Red Farm

Automatic Chicken Feeders.
Shade's Egg Food sold to consumers only.
San Bernardino, - - California.

Silver Spangled Hamburgs— Eggs for sale. Vigorous stock, eggs sure hatch. Pullets ten months old have laid 100 eggs and still laying. Los Angeles Sunset 'phone Flora 2209. Pasadena Sunset Suburban 185. Arroyo Verde Springs, Pasadena Avenue, main road, near Ostrich Farm, South Pasadena, California.

Chickens and Eggs

Having handled Poultry in this market for the past thirty years, we can give you the best results and prompt returns.

D. E. Allison & Co., Inc.
119-123 Washington St., San Francisco

White Wyandottes

Eggs for hatching from 5 pens of standard birds. 1st Cock, 1906 L. A. Show and other prize winners. $10 per 100, settings. $1.50, fertility guaranteed. Special matings and stock a matter of correspondence. ***Mt. Holly Poultry Yards,*** E. W. Preston, Prop., ***Hollywood, Cal.*** Sunset Phone, Hollywood, 901.

EGGS FOR HATCHING
from a heavy-laying strain of
SINGLE COMB WHITE LEGHORNS
I guarantee 100% fertile. Write for prices.
Golden State Poultry Yards, Lordsburg, Cal.
T. E. Mills, Prop. Home Phone 1720

SONOMA-AMERICAN INCUBATOR
Send for large circular fully describing these machines.
Sonoma-American Incubator Co., - Petaluma, Cal.

Eggs Wanted for Hatching

Our big adobe incubator brings the best results. Send us your eggs and we will return the chickens. Young Chickens and Turkeys Wanted.

Bamboo Poultry Ranch - Glendale, Cal.
AIKEN & CO., PROPRIETORS

BARRED ROCKS
EXCLUSIVELY
Send for 16-page 1905 Catalogue
H. R. CAMPBELL
Box O PETALUMA, CAL.

Mountain View Poultry Ranch

S. C. White Leghorns —Heavy layers. Eggs, $1.50 per 15, $5.00 per 100.
Indian Runner Ducks —Males for sale. Eggs, $1.00 per 13, $3.00 per 50, $5.00 per 100.

Mrs. J. L. Updyke - Fullerton, Cal.
Successor to Jacob Kreger

Rose Comb White Leghorns
High Grade Buff Orpingtons
Varian's Poultry Yards
P. O. Box 666. Home Telephone 1886
895 N. Catalina Ave., PASADENA, CAL.

Little Chicks Just from the incubator of the following varieties and prices:

White and Silver-Laced Wyandottes
$12.00 per 100
White and Barred Plymouth Rocks
$10.00 per 100
Black Minorcas | **White Leghorns**
$8 00 per 100 | **$7 00 per 100**

These are all from first class stock—none better at the above price. We guarantee safe delivery anywhere we can reach within 72 hours of San Jose.

J. S. SMITH,
Box 526 SAN JOSE, CAL.
Hatchery—450 W. Santa Clara St

A COW OR HENS—WHICH?

Secretary Wilson, in the United Stats Agricultural Reports for 1904, gives the value of poultry and eggs as $280,000,000, placing this industry at the head of the list. These figures astonished the country and led to an awakened interest in the poultry industry, evn in California.

In the Country Gentleman, of recent date, a writer makes the statement that "poultry returns a larger per cent. of profit for the capital invested than any other farm crop."

To prove this declaration he takes the sum of $50 as an investment. to start the business, investing first in a cow, then in poultry, and gives the result in the tables which follow:

A good fresh cow with her second calf will cost all of $50 and be cheap at that. She will average 8 quarts per day the year round, or 2920 quarts for the 365 days. The average price the farmer gets for his milk is 4 cents per quart, which will be $116.80 per year. In order to secure this amount, he must house and feed his cow well. For six months of the year his feed bill will be about as follows per day:

2 lb. bran, at $0.012 per lb	$0.024
4 lb. ground oats, at $0.007	.028
4 lb. Chicago gluten, at $0.015.	.060
30 lb. hay, at $0.006	.180
Total	$0.292

This daily average comes to $8.70 per month, and $52.20 for six months. The other six months he will feed about 2 lb. gluten per day at $.015 per lb., which will amount to [illegible] for the six months, bringing the feed bill up to $56.70. His stable room will be about $12 dollars a year, making a total expense of $69.60, leaving a net profit of $47.70. He should add $5 for the calf, making $52.20. Now for the poultry. Here is our initial outlay:

Henhouse, 6 by 6 feet, painted	$20.00
10 hens (thoroughbreds) at $1	10.00
1 cock	2.50
1 roll 6-foot wire, 150 feet	4.00
15 posts, at 15c	2.25
5 lb. staples at 5c	.25
1 year's feed, at $1 per head	11.00
Total	$50.00

Everything is paid for, and we can figure the profits. A hen will lay, if properly housed and fed, 110 eggs per year. Out of this number, we must save 200 for setting, so we shall have ten times 90 eggs for sale, the average price of which will be 1 2-3 cents, or $1.50 per hen, and $15 for the ten. Now we shall set the 200 eggs, which will give us 130 chicks. Of these, we can raise 100; of this number, 50 will probably be cockerels. Five of these we shall save for ourselves; 45 we shall sell for 50 cents, or $22.50 for the lot. This money will pay for raising the pullets until they are ready to lay, which will be in six or seven months.

By November the pullets will be laying and should give about 20 eggs per day, 600 per month, and at that time of the year the price will be 3 cents apiece, $18 per month. The account on Jan. 1 will read about as follows:

Eggs from hens one year	$15.00
Eggs from pullets three months	36.00
50 pullets, valued at 50c	25.00
5 cockerels. at 50c	2.50
1 henhouse	15.00
Total	$93.50
Feed for 50 pullets for October, November and December, at $1 per year	12.48
Remainder	$81.02

Let us make our comparison. The cow brought in $47.20 and we do not own her stable. The poultry brought $81.02. We own their house and have 50 additional pullets and five cockerels for the new year. These estimates are all low, and can be proved. The prices for grain and eggs are eastern prices. But even so, if we in any way neglect either the poultry or the cow, the profits will soon vanish; for, after all, success depends on the man behind the gun.

The beautiful circular from Capitol Avenue Poultry Farm, giving pictures of their prize winners is on our desk. This circular should be in the hands of every lover of fine poultry whether they raise white Wyandottes or not. It is free.

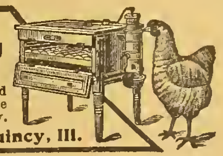
SINGLE COMB WHITE LEGHORNS
Thorough-bred Stock. Eggs, $1.50 per 15
INDIAN RUNNER DUCKS
Eggs, 1.50 per 12.
Send for illustrated catalogue
John P. Boden, 638 Second Street, Watsonville, Cal.

White Wyandottes
Eggs from standard-Bred Birds, $1.00 per 13.
H. A. Phelps, Highgrove, Cal.

White Minorca and Buff Orpinton Eggs
$1 per 13, $1.75 per 26.
Indian Runner Duck Eggs, 65c per 12, $4 per 100. All healthy and standard bred stock.
H. C. Boyer - Toluca, Cal.

White Rocks Exclusively
Limited number of young birds. Eggs from prize winning, producing strain, $2 per 15 or $5 for special mating. Write for circular.
Mrs. Rhoda E. Durfee, 1110 W. 1st St., Santa Ana, Cal.

Banning Poultry Yards
White Leghorn and Barred Rock eggs for sale, $1.00 for 15, $4.00 per 100. Fertility guaranteed. Correspondence solicited.
Morris Bros., Props., Banning, Cal.



$12.80 For 200 Egg INCUBATOR
Perfect in construction and action. Hatches every fertile egg. Write for catalog to-day.
GEO. H. STAHL, Quincy, Ill.

$8.00 COCHINS $8.00
A Trio—Buff, Black or White
Send for circular, giving undefeated show records. These are the best winter layers, finest table fowls. and by far the most healthy and hardy. Eggs, $2.00 per setting of 15. Prize winners, Eggs, $3.
HARRY McINTIRE,
SAN DIEGO, = = = CALIFORNIA.

Buff Orpingtons and Barred Rocks Pure Bred Stock
Eggs $1.00 per 14. Incubator lots, $5.00 per 100
85 per cent fertility guaranteed.
Also, a limited number of Toulouse Goose Eggs at 15c each. Telephone 1767.
MRS. ALBERT MILLER,
1913 Ricardo St. Sta A, Los Angeles, Cal.

S. C. WHITE LEGHORNS
I can furnish you with first-class eggs that will hatch strong, vigorous chicks, and give you satisfaction. $2.00 per 15, or $7.00 per hundred. Stock for sale. All eggs and stock purchased of me shall give perfect satisfaction. I make this a point.
Monte Vista Poultry Farm
L. D. Pettit, Mgr. Corning, Cal.

200 Eggs a YEAR From One Hen

CAN YOU show this record?

How many possible eggs have you lost—eggs which you might have had—if you had been using a feed which had been tested for you.

A Feed which makes a 200 egg Hen out of a Scrub, and makes a 200 egg Hen lay 225 to 250 eggs a year. Figure it out.

How can you afford to make expensive personal tests, when

PURINA POULTRY FEEDS

will bring out every egg your hens are capable of laying. A feed which will bring EGGS in Winter as well as in Summer—40c Eggs as well as 12c Eggs—from ALL your hens.

And you don't have to take our word for it, either—just try PURINA FEED at our expense, and believe the evidence of your own senses—that's all. It won't cost you a red cent to prove us right or wrong.

If the results don't come, just tie up the bag and write us, and we will return every penny of your money and tell you what to do with the unused feed. You are not out a cent in making the trial, for we will supply you through your dealer or direct FREIGHT PREPAID and the feed used in testing costs you nothing.

This is the Money Back Line—
Write today for particulars about our FREE TEST Plan.
ACME MILLS CO.
PACIFIC COAST MANUFACTURERS
PORTLAND, OREGON

Brown Leghorn and White Rock Eggs
For Sale, $1 per 13, $6 per 100, also two fine White Rock Cockerels at $2 each.
Willis F. Wiesmore, 835 High Ave., Redlands, Cal.

Indian Runner Ducks
Eggs for hatching from fine, healthy, thoroughbred stock. Egg, 75c per 13. **M. T. Taylor, 256 N. Eastlake Ave., Los Angeles, Cal.**

White and Buff Wyandottes
Prize-Winning, Egg-Laying, Wealth-Producing Strain.
M. E. DILLINGHAM, SAN GABRIEL, CAL.

White Plymouth Rocks
First class stock. Eggs, $1.00 per 13, $2.00 per 30. Indian Runner Ducks—$1.00 per 15, $2.00 per 33. A few ducks for sale. **H. S. Thompson, 125 W. Avenue 54, Los Angeles, Cal.**

Buff Wyandottes
Trios. $6 to $15. Cockerels, $3 and up.
O. S. Hofman San Jacinto, Cal.

WHITE WYANDOTTES

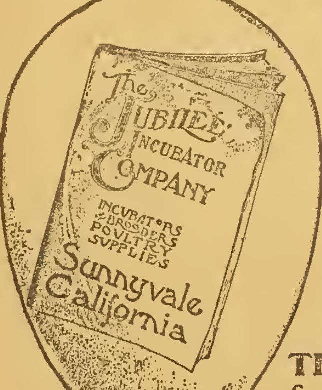
200-250 Egg Fowls **16 Prizes San Francisco**

Scored by T. E. Orr, eminent Eastern Judge. Our "Cream of the Coast" White Wyandottes swept the deck at San Francisco. Unsurpassed as layers and as exhibition birds.

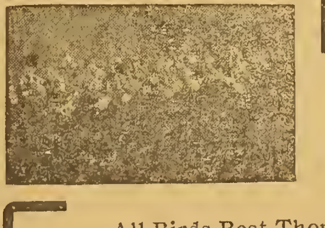
Beautiful Circular Free, giving pictures of our prize winners, description of our matings and prices. Settings and Incubator Lots; Pens and Cockerels.

We prepay express and guarantee fertility.

CAPITOL AVENUE POULTRY FARM
A. L. R. MANTZ Rural 21, Box 98k SAN JOSE, CAL.


The JUBILEE INCUBATOR COMPANY
INCUBATORS BROODERS POULTRY SUPPLIES
Sunnyvale California

Poultrymen's Profits
HOW TO MAKE THEM
Use Jubilee Incubators and Brooders
The acknowledged Business Machines of the World
HOW TO SAVE THEM
Buy your supplies direct from us at Wholesale Prices
Send a postal card for **The Jubilee Book**—80 Pages—Handsomely Illustrated—Sent by mail—FREE.
THE JUBILEE INCUBATOR Cº
Sunnyvale Santa Clara Co California



INDIAN RURRER DUCKS
Eastern Prize Stock
Flock of 500 Birds. Eggs, $1 per Setting; $5 per Hundred

S. C. White, Brown and Buff Leghorns; eggs $1 per setting of 13, $5 per hundred. Barred Plymouth Rocks, Rhode Island Reds, $1 per 13, $5 per hundred. Light Brahmas, $3 per 13.

All Birds Best Thoroughbred Stock Telephone Black 708
H. M. Warren, 145 Clinton St., Santa Cruz, Cal.

HUSKINS' WHITE WYANDOTTS

Prize winners for two years, 1905 and 1906, at L. A. Eggs for hatching from standard bred stock, $1.50 per dozen, or if you mention Cultivator, will send thirteen.

A. W. Huskins, 713 Waterloo St., or 541 South Main St., Los Angeles.

THOROUGHBRED YOUNG CHICKS

White Leghorns, 10c.
White Ply. Rocks, 12½c.

Wm. A. GREEN, Box 401, ANAHEIM, CAL.

BRONZE TURKEYS

Hart's strain. Winners of five firsts at Los Angeles Show, '06, and always winners wherever exhibited. Write for prices.

ED. HART, CLEMENTS, CAL.

White Plymouth Rock Poultry Ranch

Eggs for hatching from First-Class Stock. $6.00 per 100, $1.50 per setting 15 eggs.

J. T. DAVIS, Prop. POMONA, CAL.

Brown and White Leghorns

Prize winners at L. A. Show, '06. Eggs from good laying strains. Eggs, special matings, per 15, $2.00. Incubator lots, $6.00 per 100.

Hemet Poultry Yards, Hemet, Cal.

Blue Andalusian Eggs

$1.50 and $2.00 for 15, $7.00 per 100. Free range. I raised and sold cockerel winning first prize at late L. A. poultry show. Stock. ***Mrs. J. S. Duff, 3145 S. Hoover St., Los Angeles, Cal.***

Rhode Island Reds

Fine stock of cockerels and hens for sale. Eggs, $1.50 per setting.

C. E. DAVIS, REDLANDS, CAL.

White Wyandottes

Eggs for hatching from standard bred birds, $1.50 per 13. Hens and Pullets for sale.

A. P. Robinson, 263 Prospect St., near Park, Riverside

S.C. White Leghorns Indian Runner Ducks

Eggs, $1 per setting, or $5 per 100. Leghorns of McFarlane strain. Fertility high, 80% guaranteed. ***J. E. Beadle, 901 No. St. Louis St., Los Angeles.***

WILLARD POULTRY FARM, HYNES, CAL.

Mrs. F. T. Hungerford, Manager

INDIAN RUNNER DUCKS

At San Francisco show, 1905, I won 2nd and 3rd on young drake and 1st on young duck, with 3 entries. At the 1906 Los Angeles show, 1st on old drake, 1st and 2nd on young drake, 1st and 2nd on young and old duck and 1st on pen. Eggs—$1 for 13, $3 for 50, $5 for 100. Hens' eggs all ordered up to April 1st.

FOR SIX YEARS

Albers' Black Minorcas

Have led in the shows every year, and they lead all breeds in egg production all the time. Eggs in large or small lots. Stock for sale. Circular free.

GEO. R. ALBERS

4849 MARMION WAY LOS ANGELES, CAL.

30 DAYS TRIAL

Buy From Our Factory—Save One-Third.

PRACTICAL INCUBATORS positively the best. Hatches more and stronger chicks. 10 YEARS' GUARANTEE

Cat. free. PRACTICAL INC. CO., 720 S. 11th St. San Jose, Cal.

Why do you pay $5.00 to $8.00 per hundred for eggs for hatching when you can get just as good eggs from just as good stock from us at one half that price? Our stock is large and healthy. The hens lay lots of large white eggs that run as high as 98% fertility. We sell eggs in incubator lots only at $2.50 per hundred.

Avenue Poultry Yards, Ventura, Cal.

COSTLY POULTRY.

Editor Cultivator: I wonder how many readers of your fine journal have been deluded into purchasing costly poultry? I was, and I want to say, that while my husband and I thorourghly appreciate the charm, as well as the value of the pure bred poultry, and have invested in them many hundreds of dollars we are free to confess that many dollars would have been saved had we gained our experience with less costly birds. When we started in the poultry business we knew just what most farmers do of poultry; that is, we had kept from fifty to a hundred mongrel hens year after year, we say we kept them, but in reality they kept themselves. We fed them, or rather all of the home fed them, and when eggs or carcasses were wanted they were easy to find. We believe we made considerable pin money from the hens and we remember that many comforts were found in the home which the farm proper did not supply. But when the "hen fever" struck us nothing but pure breds would do and $50 of hard earned money went into such stock. We will not say what resulted. Enough that it was not profitable and the third year we were content to go less fast and gain experience from a dozen pullets, the result of hatches from two sittings of $1.50 a sitting eggs. From experience we can advise others to start in this way. Get experience and then will be time enough to experiment with the purebred breeds.—Ella G. S.

BE GOOD TO THE HEN.

What the hen on the farm needs is the proper assortment of grain, plenty of green food and a full proportion of meal and grit. If this is provided and they are properly housed and made to exercise you will have hens in winter when it pays well to have them.

If the cow is not by nature a heavy and rich milker, all the balanced rations one can prepare will not make her such. So with the hen. She will only return for food and attention up to her original capacity.

More and better green food supply and more meat of some kind are what the hen needs for winter egg production.

As to what is enough green food we would say all they will eat. As to the quantity of cut bone or meat, all you can afford to give them and hold a profit, as a possible egg yield of say three eggs per week per hen.

Give them of animal food less than one-tenth of their whole ration of meat, and from this up to one-fifth of their whole ration of meat as cost will permit.

In securing a good supply of eggs the inborn tendency of heavy laying is an important point. It is a tendency which goes in certain strains the same as in certain families of cattle, and without it no amount of skillful care and feeding will produce the best results.

Chickens that are poor without being cared for make but small progress in life, seldom, if ever, become the best egg producers. To have the best results with a quick spring growth necessary for the establishment of size and vigor, they must be well fed, regularly fed and properly fed from shell to finish. Anything short of this insures an advance to poor growth and poor results all along the line.

Pick all small, slow-going indifferent appearing pullets and save them for broilers. Keep for maturity only the best of the whole lot of pullets.

THE SURPLUS STOCK.

One of the best poultry breeders of which we have any knowledge has a house especially constructed for his surplus stock. He is a breeder of pure bred fowls and sells many thousands each year. He has a number of houses for his breeding stock and such are kept in breeding condition all the time by a system of management peculiar to their wants and requirements.

The stock that is to be sold is selected early and placed in the house set apart for that kind of stock and all are fitted to best come up to the purposes for which they are intended. This house has several apartments. One apartment is devoted to that stock which does not come up to the requirements as to breed qualifications, which may be disqualified for breeders.

Standard Bred S. C. White Leghorns

EXTRA LARGE BIRDS AND HEAVY LAYERS. Eggs, $2 per 15; $8 per 100; $60 per 1000 from January until July only.

CAPTAIN MITCHELL SANTA BARBARA, CAL.

Author of "A Practical Poultry Plant for Southern California," $1.25 cloth binding, on sale by Calif. Cultivator

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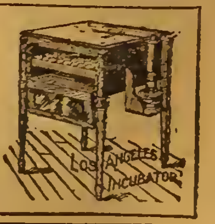
Dean's Pacific is an Incubator built on scientific plans and has all the latest improvements. Every machine guaranteed. "Facts From Experience" and Catalog for the asking. Address ***Dean's Place, 2509 Central Avenue, Los Angeles.***



SUCCESS

☞ SEND FOR CATALOGUE

IS ATTAINED WITH

LOS ANGELES INCUBATORS

LEE'S LICE KILLER EGG MAKER | LARGEST POULTRY SUPPLY HOUSE IN THE U. S.

HENRY ALBERS 315 S. MAIN ST. LOS AGNELES

West Coast Chick Feed

Is the Best. Manufactured by West Coast Stock Food Co., 818 San Fernando St, [through to Alameda] Los Angeles

Caponizing Set

Double Your Profits by Caponizing.

Complete with Instructions, $2.50, Postpaid

STOCKMEN'S SUPPLY CO.

FRESNO, CALIFORNIA

Copyright 1905 by Leo W. Marden

MARDEN EGG FARM

HYNES, CALIFORNIA

Breeders of S. C. White Leghorns Exclusively

Fine Feathers alone do not make the profitable hen. Our fowls have the reputation of being ***extra large, handsome*** and ***extra heavy layers.*** Last season, our eggs averaged over 95 per cent. fertile. ***Remember***—In getting eggs from us, you do not get them from the general runs. We have but one grade of eggs to sell for hatching and those are from our breeding pen composed of only the choicest fowls, selected from hundreds that are ***bred to lay.*** Hens that approach the ***200 egg record.***

Price of Eggs—$1.50 per 15, $5 per 100. ***Send for Illustrated Catalogue. Address,***

LEO. W. MARDEN, Manager

LAYING HENS

We have a few choice 1½-year-old Thoroughbred White Leghorn hens, which we are offering at a sacrifice. In order to make room for our young stock we are offering these fowls at $15.00 for 12 hens and 1 rooster or $100 per 100.

We also have a number of 5-months-old pullets, also of the same variety, on which we can name you the same price. If your stock needs renewing, send in your order at once, as they are going fast.

We have a Hatchery of 50,000 chicks per month capacity, from which we are making shipments daily to all parts of the Coast. If you need any just hatched chicks have your order booked at once, so as to get them on the date desired. Our price for just hatched chicks is $7.50 per hundred f. o. b. Petaluma.

We manufacture the famous MUST HATCH INCUBATORS AND BROODERS and a complete line of poultry supplies of every description. We cater to the best hatching egg trade on the Coast.

Before purchasing write for our new illustrated Catalogue B. which contains descriptions, prices, etc., of all our goods.

Must Hatch Incubator Co., Petaluma, Cal.

These cannot be bought at any price by customers or those who would use them as breeders. They are fitted for another market and are marketed in such a manner that they can cast no reflection on the honesty or ability of the breeder. He hires a man to dress them when they are ready for the market and he is quite sure that none of them will ever be used to his own disadvantage.

Another apartment is devoted to males and still another to females for sale as breeders. These he has graded as to merit and price. When a customer comes he can see anything from the dollar cockerel to the ten dollar bird. As we looked through the house we wished that more breeders could see his system of management and there would be less reason for classing the poultry breeder among those of doubtful honesty. He says he cannot afford to sell a poor bird of any kind. It advertises him in the wrong manner.

We are of the opinion that the grower of poultry for the market can afford to have a house for the surplus stock and for that which is being fitted for the market. In the fall of the year he can select those to be used as breeders, those for layers and then he can use the surplus house for fitting all others for the market, which should require but a short time. When they are sold the house can be converted into laying quarters or given over to some other flock kept for another purpose.

When the average poultry breeder will make a selection of his breeding stock in the fall of the year and everything selected with a view to improvement, then there will be less complaint of the non-paying fowl. Selection and intelligence can be observed in a flock quite readily. Neglect is also as readily visible.

SHELLESS EGGS.

Shelless eggs are due to various causes, sometimes a lack of lime in the feed. In this case it is without a doubt due to some other cause. It is seldom that we come across as good a system of feeding as is detailed in this letter. As a result, the pullets having been well bred, respond with a high percentage of eggs. In the writer's opinion the cause of the shelless eggs, as well as the double yolk one, is due to an overly stimulated condition of the egg organs causing inflammation of the same. Such condition will usually yield promptly to the following treatment. Give the fowl one tablet of ustilago madis 2x, three times a day, until she recovers.

THE DELUSIVE HEN

More men have sailed to shipwreck in the poultry business than in any other that one can easily recall, and yet there is no other business which, from every consideration of mathematics, political economy and biology ought to pay so well.—Portland Oregonian.

A hen can't dig and scratch lice all night and keep healthy and a broody hen cannot remain quiet with hundreds of parasites making football rushes over her anatomy at all hours.

Lice breathe through their pores so any dust will stop their breath and we owe it to Biddie to make her as comfortable as possible.

Oh. yes, poultry raising is pleasant and profitable for women, but "Don't start into poultry if you are afraid of soiling your hands."

Even now if you find any overfat hens in the flock, dispose of them at once.

Keeping hens busy is of first importance but should not be carried to extremes.

Because a hen will eat filthy food is no reason why more of it should be fed to them.

A steady diet of raw oats sometimes causes indigestion. It is better to scald or cook the oats.

Overcrowding, overfeeding and under-exercise are the common causes of failure with poultrymen.

It may be that your young stock is the best, but as a rule the strongest chicks are produced from old and well matured birds.

White Wyandotte Eggs

For hatching. Pure Dustin & Hallack strain. From 1st Pen, $3.50 per setting, 2nd pen, $2.50.

Mrs. S. H. Church, 505 S. Main St., Los Angeles

Buff and Black Orpingtons
Buff and Brown Leghorns
Indian Runner Ducks—Bronze Turkeys
Eggs and Young Stock in Season
W. W. Bliss - Duarte, Cal.

Single Comb Brown Leghorns
Exclusively

Stock for sale and eggs for hatching. Eggs from first pen $2.00 per 15 eggs, second pen $1.50 per 15. Incubator lots for $6.00 per 100 eggs. They have always won first prize whenever shown. Large birds and heavy layers.

W. E. Mercer - - Ventura, Cal,

A POULTRY COLONY
NEAR LOS ANGELES

Is at present being formed for the purpose of mutual benefit. Situation unexcelled; plenty of good water, splendid soil and close to town. For particulars apply to

Anna L. Pinkerton
Realty Trust Company, 129 So. Broadway,
Los Angeles, Cal.

Fairview Poultry Yards
SILVER LACED WYANDOTTES

Two pens, both headed by prize-winning cockerels; 1st at Los Angeles and 1st at San Diego. Four prize-winning females in pens. Eggs, $1.50 per 15.

WHITE PLYMOUTH ROCKS

Special mating, pen headed by Fairview Prince, a son of the best layer in our yards. $1.50 per 15. Five pens large MATURE hens mated to vigorous Cockerels, $1 per 15 eggs; $5 per 100. Eggs from these pens specially recommended for incubator hatching.

A. E. NELSON, EL MONTE, CAL.

Golden Crest Poultry Yards

White Leghorns—Eggs, 50c per setting, from pens of Petaluma's best laying strain. $3.00 per 100.

Barred Rocks—75c per setting.

Prize winning **White Crested Black Polish** my specialty.

Geo. H. Randall
C St., Santa Ana

EGG FOOD A·C·W IT FILLS THE BILL

Health is Wealth

The foundation or beginning of any enterprise or business must be sound to insure success. Healthy, strong ***chicks*** insure good, strong fowls that lay eggs that in turn produce chicks that have a good start in life, a good ***constitution.***

A. C. W. Chick Food

is to Chicks what ***pure*** milk is to a baby—the best diet known.

Health is truly wealth and in no case more so than in the Chicken business. A. C. W. Chicks are healthy. ***Why?*** Because the food is pure and of the best We see to it that there are no inferior or musty grains causing bowel troubles or other ills in our A. C. W. Food. Think how delicate is the organism of a ***Chick,*** then you will be careful only to feed the foods known to contain clean, bright stock properly balanced.

A. C. W. Foods are in guaranteed and ***sealed*** sacks. We stand behind the guarantee. ***Money back*** if goods are not as represented.

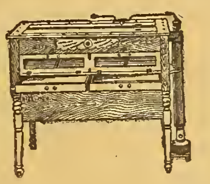
Ask your dealer for A. C. W.

Agricultural Chemical Works **901-907 Macy Street**
Los Angeles, Cal.
Phones: Sunset, Boyle 3; Home, 6063
Manufacturers of Bone Meal, Blood Meal, Meat Meal, Shell, Grit, Etc.

THE FEATHERLEY FARM ORPINGTONS

Over 30 prizes, specials and cups in **Buff, Black and White Orpingtons** on 27 entries this year at San Francisco, San Diego and Los Angeles. Bred for utility and egg purposes, as well as prize winning qualities. Eggs from $2 to $3 a setting. Write for free mating list, describing my ten prize yards.

P. L. Harley, Box C, Redlands, Cal.



The Stockton Incubator

Is now manufactured under new management and is in every way put up as a first-class machine. Our 1906 model is a perfect working incubator, economical to run and gives a fine hatch.

Winner of silver medal at Pan-American, also medal at California State Fair. Write for circular and information.

Stockton Incubator Co.
Marshall & Barnes, Props. Stockton, Cal.

Emery's Pure Meat Meal

Don't believe all we say, but just enough to buy our Poultry Foods

Ask your nearest dealer for them and take no imitations

Emery's "B. B. & B."

THE PACIFIC GUANO & FERTILIZER CO. Successors to N.Ohlandt & Co **San Francisco, Cal.**

EGGS

Barred Rocks, White and Brown Leghorns, $5.00 to $6.00 per 100, $1.25 to $1.50 per 15. White Wyandottes, $7.00 to $8 00 per 100, $1.25 to $2.00 per 15. Reds, Orpingtons and White Rocks, $6 00 to $7.00 per 100, $1.25 to $1.50 per 15. Other kinds, prices on application. You can buy cheaper eggs than we sell, but are they good? Are they guaranteed? Ours are. Sole Agents Standard Cyphers Incubators.

Kloninger Bros. 838 S. Main St. Los Angeles

Excelsior Dry Chick Food

Will raise 98 per cent of your chicks. **Price, $3.50 per 100 lb.**

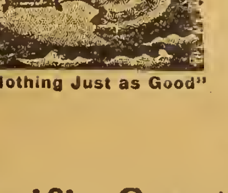
——Excelsior Egg Food——

Will make your hens lay eggs. **Price, $2.00.**

Our assertions have been proven by those that use them. The live articles will do all we claim. All we claim is **results.** Results produce Chicks and Eggs. Chicks and Eggs produce **cash.** Cash is what you raise Chicks and Eggs for. Are we right? We will prove it if you use them.

Del Monte Milling Co.
242 Central Avenue - - Los Angeles, Cal.

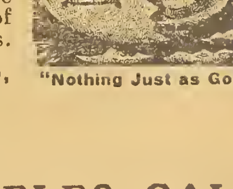
Chamberlain's Perfect Chick Feed



"Nothing Just as Good"

World's Chick Feed of To-Day. The only original **Dry Chick Feed.** All others are worthless imitations. **Chamberlain's Perfect Chick Feed** was used exclusively at the great St. Louis World's Fair during the 7 months. This the highest compliment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.

CHAMBERLAIN'S PERFECT MASH EGG FEED,
THE WORLD'S GREATEST EGG PRODUCER.



"Nothing Just as Good"

GERMAIN SEED CO.,
Pacific Coast Agents. LOS ANGELES, CALA,

SPECIAL PRICES ON TON LOTS.

Distributing Agents: FREDERICK BROWN, San Jose; CHAS. H. NEARPASS, San Diego; CHANNEL COMMERCIAL CO., Santa Barbara and Ventura.

STREET TREES

Continued from first page.)

evergreens, our most beautiful tree perfectly adapted to local conditions. This tree is supposedly of slow growth but in good soil and with sufficient water for the first few years it will keep pace with the average tree. The oaks should not be planted too close together, 40 feet being near enough for country roads, and in case of 50 foot lots, one every 50 feet at the dividing line between the lots, with some smaller growing tree between. The latter could in after years be cut down. A better plan would be to plant between the oaks two fine flowering shrubs, even though they were deciduous, as the crepe myrtle. These could later be moved to the yard, or find a ready sale for large estates, being always in demand. The crepe myrtle is extremely easy to move when of a considerable age.

Many trees claim second place, but the Victorian Bottle tree (Sterculia diversofolia,) has proven satisfactory in nearly all parts of the State. It is one of the cleanest of trees, of a bright. pleasing shade of green, the trunk is straight and mast-like, the branches are not far reaching and therefore not liable to injury by wind, and need little, if any, pruning; it is a fast grower when well supplied with water, yet noted for its drought resisting qualities. Its general outline is well nigh perfect, its carriage peaceful, it does not grow so thick as to harbor dead leaves and rubbish, yet enough to cast all needed shade. Seldom does one make abnormal growth and it will not injure the sidewalk by upheaval.

Trees of equal value may be found in the acacia family, in dealbata, decurrens, mollissima, saligna, cyanophylla, or any of the medium or large growing species. The most common one is the Blackwood (A. melanoxylon,) but it is not adapted to semi-arid or mesa conditions. It needs a rich, deep, moist soil.

St. John's Bread, or Carob Tree, is one that is bound to be extensively used in the future. It is a very fast grower and its drought resisting qualities are of the first order. It has been tried under varying conditions and always found satisfactory.

The common Grevillea robusta is a fair tree for dry localities in the country but for use in cities or towns it is too dirty. It should be pruned at least every other year for six or eight years. for the wood is quite brittle, and easily broken by the wind.

There are three species of Pittosporum which would make fine street trees, but they are as yet little known, though in time I believe P. undulatum will head the list. (Ligustrum lucidum,) a privet is very showy and soon attains the dignity of a tree. Several eucalypts are worthy of a place along the roadsides, but for more thickly settled sections I do not like them. The best species are: rudis polyanthemos and ficifolia.

Some streets should be planted to palms, to gain variety, and for this purpose the Mexican Fan palm (Washington robusta) is by far the most suitable, while the Chinese Windmill palm (Trachycarpus excelsus) is the best for narrow streets. The latter palm is known to nurserymen in general as the Chamaerops. Washington robusta grows, in height. about four times as fast as Washington fiilifera, the California Fan palm. Palms, however, should always be accompanied with other trees and shrubs, and be given liberal parkways.

A few streets should be planted with flowering trees, such as Jacaranda, Lagunaria, and the crepe myrtles. The first named needs pruning for the first few years but the magnificent crop of blossoms would amply repay for such care and it has given satisfaction where ever tried. It is not as essential to have some particular tree as it is that each street, or each block at least, should be planted with but one sort. and in carrying out this plan, cooperation is the keynote to success.

Plant roots are now packed so carefully that any one can order them by mail with confidence that they will arrive in good condition.

The C. H. Lilly Company, of Seattle, who have had singular success in shipping roots, have a wet and dry process which is peculiarly their own. All tops are packed in dry wool, which affords a complete protection from damage by mail, and the roots are imbedded in moist moss. As a rule roots from the Lilly Company can be grown successfully by simply dropping them in a hole and running a little water in while the hole is being filled with dirt. The water sluices the dirt in among the roots and gives the tiny feelers a nice bed.

When roots look dry it is best to immerse them over night in water. Roots which look absolutely dry can frequently be saved in this way.

The Bolton Electric Alarm has saved many an orchard and vineyard in California. It is an automatic thermometer alarm which may be regulated to ring a bell at the bedside of the watcher a mile or more, if wished, away from the crop which is in danger, thus arousing the owner to build the fires, which have been found sufficent to raise the temperature above its danger point. Mr. Bolton is located at Fresno and will give further information on request.

The Way to Get Ready for Harvest

It is not enough to *grow* a good crop.

You have to *harvest* it, before you get your profits.

And your profits now depend very largely upon the *way* you harvest it.

A worn-out harvesting machine, or one that is not very good, even when new, may delay you long enough and waste enough grain, to turn your profits into loss.

It is a mighty poor policy to grow a good crop of grain and then let a part of it rot in the field.

It does not take a great deal of *waste* to eat up all your profits.

It may be only a spoonful of grain at a time but it counts.

Don't waste.

You can't afford it, and there is no necessity for it.

Get ready for a *profitable harvest.*

Do it now, while you have time.

Here is the way:

Go to an International Harvester Company of America dealer and ask him for a catalogue of the machine he handles.

He will be pleased to give you the book—and you will be pleased to get it.

He will be pleased to show you the machine—and you will be pleased to see it.

You will find the book extremely handsome, well illustrated with good pictures, interesting from start to finish and full of good, common sense about harvesting machines.

But more important, you will find a *good* harvesting machine.

That is what you are most interested in for that means dollars and cents to you.

We take it that you want a harvesting machine

—that you can depend upon to see you through the harvest without break or delay;

—that will save you the greatest amount of time and labor and worry and trouble in the busy harvest days;

—that will harvest the grain you have grown with the least possible waste;

—that will not go to pieces after cutting a few hundred acres;

—that will be easy on your team;

—that you can get repairs for easily and quickly when you need them;

—that will, in short, give you thorough satisfaction in every way—doing for you everything that you can in reason expect a harvesting machine to do.

If that's what you want, all the more reason for looking up the agents of the International line.

You know the line—the six leading makes of harvesting and haying machines, used wherever grain and grass are grown:

Champion, Deering, McCormick,
Milwaukee, Osborne, Plano.

Better harvesting and haying machines cannot be made.

As good harvesting and haying machines cannot be made *without* such facilities as the International Harvester Company possesses.

Such facilities are made possible *only* through the co-operation of the manufacturers of these several lines of machines.

It is co-operation which enables them to produce from forest and mine their own raw materials—and thus be independent of uncertain and fluctuating markets. Acting together, they own, control and operate their own coal and iron mines, their own coke-ovens and steel mills, their own lumber camps and saw mills. They not only get their raw materials of first quality, but what is of equal importance they get them when they want them.

It is co-operation which enables them to maintain experimental shops where every effort is made to perfect the principle and improve the design of the International Line.

It is the great *demand* for their machines which enables them to equip their factories with every possible facility for producing machines of the highest excellence—factories and workmen which could not by any possibility be maintained to supply a small demand.

It is this *demand* which enables them to maintain agencies almost everywhere where grain is grown—convenient to you—convenient to buy—convenient to secure repair parts.

The fact that so many farmers cannot be persuaded to buy any other,—the fact that so many farmers continue to buy them,—the fact that they are considered the standard wherever grain is grown in every part of the world is sufficient indication of their reputation and their reliability.

We don't believe that you will be willing to let harvest time approach without knowing more about the International line for 1906; we *know* you will be glad to get the catalogue. Call on the dealer at your very first opportunity.

Go to the dealer *now*, and get whichever catalogue you want.

If you don't know an International Dealer—write to us for the name and address of the one nearest you.

INTERNATIONAL HARVESTER CO., OF AMERICA.
(INCORPORATED)
CHICAGO, ILLINOIS

WESTERN GENERAL AGENCIES: Denver, Colo., Portland, Ore., Salt Lake City, Utah, Helena, Mont., Spokane, Wash., San Francisco, Cal.

International Line:—Binders, Reapers, Headers, Header Binders, Corn Binders, Corn Shockers, Corn Pickers, Huskers and Shredders, Corn Shellers, Mowers, Hay Tedders, Hay Rakes, Sweep Rakes, Hay Loaders, Hay Stackers, Hay Balers, Knife Grinders, Gasoline Engines, Pumping Jacks, Manure Spreaders, Weber Wagons, Columbus Wagons, Bettendorf Wagons and Binder Twine.

Queries and Replies

BURR CLOVER

Editor Cultivator—Can you tell us if the enclosed plant is dodder? We found it in alfalfa. C. Bros., Imperial.

The plant is Burr-clover (Medicago denticulata) the closest relative of al falfa, (which is Medicago sativa.)

CALIFORNIA POPPIES.

Editor Cultivator: Is it now too late to sow California poppy seed and have seeds ripen again this season? —L. C. S., Lemon Grove.

No. Balance of your questions answered in our first page article.

NO RULE CAN BE GIVEN.

Editor Cultivator: Will you inform me of your idea of feeding hogs. Have raised lots of hogs, but have always done it one way. I wish to get some one else's idea. Suppose I should start in with a sow and a half dozen pigs. How would you care for and feed until time to fatten for market? Would swill from hotels hurt them as it sometimes does chickens? What is the most profitable hog to raise? Do you know of any one around here from whom I could purchase a start. I have been a reader of your valuable paper for a number of years, but have never thought seriously about the best way to raise hogs to pay much attention to what has been written in regard to them. —C. G. D., La Canyada.

The editor of this paper has raised hogs in Iowa for fifteen years, but when it comes to telling anyone else how to raise them the matter becomes difficult. In California, the best and healthiest feed for pigs after they are weaned is alfalfa. On this they will grow and fatten with but a small ration of bran and chops stirred in their milk morning and night. Now and then add a little wood ashes or copperas water to cleanse the stomach and bowels. Have a clean place to rest them at night, where the rain and wind will not give them cold. Keep plenty of clean water on hand for them to drink; watch their tails that they curl, and their hair that it lays smooth and glossy. Never feed the refuse from hotels as it breeds hog cholera. When your pigs reach four months, begin to feed them barley to strengthen the bones and add firmness to the meat. At six to eight months your shoats should be ready for market.

Write M. Bassett, of Hanford, Cal.. about stock. Remember one thing it doesn't cost as much to fatten a well bred pig as a runt and the satisfaction of caring for the former is the difference between the good and the bad.

BEAUTIFUL CHRYSANTHEMUMS.

The cuts on the first page of cover of last week's paper gives a faint idea of some of the latest productions of chrysanthemums, and will remind those who were at the fall meeting of the Southern California Horticultural Society and others who were fortunate enough to visit the Pomona Nurseries, of the magnificent flowers grown by Mr. William Marugg.

These engravings were made directly from photographs of Mr. Marugg's flowers, and it was by oversight that we failed to give credit to him for the use of the cuts.

The largest apple orchard in Southern California is located in San Bernardino county near Victorville, and consists of 400 acres.

M. D. Whitcher of Los Olivos, Santa Barbara county, breeder of fine Italian queens is advertising on another page. Bee keepers will find his queens give good satisfaction.

S. W. Morgan, of Sunnyside, San Diego County, is advertising standard white Minorca eggs in large or small quantities in this paper.

White Minorca. Buff Orpington and Indian Runner duck eggs are advertised by H. C. Boyer, of Toluca.

J. E. Beadle is advertising S. C. White Leghorns and Indian Runner ducks in this issue.

When you get it it grows—Lilly Japanese Honeysuckle root. See advertisement on page 273.

Seek Safety First

There is but one absolutely safe and certain way to accumulate money—that is to save it and deposit it in the bank, where it is free from the ups and downs of speculation.

The Board of Directors and Officers of this Bank are men of sound business judgment and integrity—men who have been identified with the marvelous development of Los Angeles and the Great Southwest.

4% Interest Paid on Term Deposits.

3% Interest Paid on Ordinary Deposits.

Interest Compounded Semi-annually

223 So. Spring St., Los Angeles, Cal.

GERMAN AMERICAN SAVINGS BANK 4%

The Final Week of Our First

Annual Clearance Sale

We are going to bring our great Clearing Sale to a close this next week and will put forth every offort to make it the greatest week of furniture selling ever know in this city. The price on every article is at least 15% less than regular and from that down to half price.

Save 15% to 50%

As this includes even the late shipments of new goods it will certainly repay you to make a special trip to the store. Remember this is our complete stock; the Niles Pease stock which is one of the finest on the coast.

The reductions are genuine and the prices are marked in plain figures.

Niles Pease Furniture Co.

439-441-443 S. Spring St., Los Angeles, Cal.

Rich Lake Bottom Lands. Abundance of Water

All the conditions which make for Profit to the farmer and investor are found in lands in

Kings and Tulare Counties .

And the IMPROVEMENTS being made on the lands of this Company make values certain to increase rapidly.

The character and standing of the management and directorate of this company insure conservative development and eliminate everything of a boom nature from their operations, and are of themselves a guarantee that whatever they engage in has merit.

The directors are: W. C. Patterson, Gen. H. G. Otis, Arthur Letts, Robert Hale, O. J. Wigdal, Dr. Alan Gardner, J. B. Brokaw. George Hanna, P. B. Chase, Judge M R. King, L. S. Chittenden, A. F. Flory, A. J. Pickrell, J. Jepsen, H. J. Whitley.

The President and large owner in the enterprise is H. J Whitley, well known thr ugh his operations at Hollywood and elsewhere.

Substantial Improvements

Low Prices

THAT IS THE PLACE
25 MILES ALONG MAIN LINE OF SANTA FE
JUNCTION AT CORCORAN CONNECTING WITH SO. PAC
BETWEEN TWO LARGEST MARKETS IN STATE
HEALTHFUL EQUABLE CLIMATE
RICH LAKE-BOTTOM ALLUVIAL LOAM
ONE OF THE VERY BEST ARTESIAN SECTIONS
LARGE CANALS FOR FLOOD WATERS
UNSURPASSED FOR ALFALFA & DAIRYING
HOGS, CATTLE, HORSES & MULES THRIVE & BRING LARGE PROFITS
CORN AND GRAIN PRODUCE IMMENSE CROPS
GRAPES & DECIDUOUS FRUITS HIGHLY PRODUCTIVE
TRACTS OF 5 TO 500 ACRES TO SUIT
ALFALFA LANDS $50 PER ACRE AND UP NEAR CORCORAN
LARGER TRACTS $15 PER ACRE & UP
VERY RICH FERTILE LAND-ABUNDANCE of WATER
EASY TERMS-LIBERAL REBATES FOR IMPROVEMENTS
SPECIAL INDUCEMENTS TO HOMESEEKERS
EXCEPTIONAL BUSINESS OPPORTUNITIES AT CORCORAN
MONEY IN THE BANKS, GOOD LIVING FROM MARKETS
SACRAMENTO
SO. PAC
SAN FRANCISCO
STOCKTON
FRESNO
HANFORD
CORCORAN
VISALIA
TULARE
OWENS LAKE
KINGS CO
TULARE CO
BAKERSFIELD
BARSTOW
LOS ANGELES
SAN DIEGO

Early Purchasers get the benefit on Investment of over a

Million Dollars

By this Company and its Stockholders.

Liberal Rebates for Improvements

BUSINESS OPENINGS

Exceptional opportunity for
Harness Shop Brick Yard
Drug Store Paints and Oils
Laundry Dry Goods, Notions
Billiard Parlor and News Stand
in the town of CORCORAN now being built on our lands.

WANTED

200 teams at once to put in crops—preference given to those who will become settlers. Houses and Barns furnished.

WANTED

Practical, experienced farmers with teams and implements to rent and care for tracts of 40 to 500 acres. Houses and barns furnished. Plenty of outside work while crops are growing. Liberal terms.

Phone, Home Ex. 200
Main 4972

Security Land and Loan Company

Home Savings Bank Building

Ten-Day Excursion—Half Fare—Next Tuesday Night.

Spring and Court Sts., Los Angeles

Household Department

A Poet's Heart

"I know you are a fraud," she said lightly.

She had a little thin volume in her hand. It was daintily bound. A gold daffodil, prim and shy. stood in silhouette on the cream cover. In the lower right-hand corner was the poets name, also in gold.

"I have always known that you knew," the Poet answered, gravely. "You have a habit of seeing our souls. It is disconcerting to us."

Then they both laughed, his laugh as gay as hers.

The room had the mid-afternoon sun It streaked it prettily, playing hide-and-seek with the blue china in an old oak bureau.

"Daffodils" she read with a pretty scorn. "And full of dainty love-songs. Are you not ashamed of your fraud?"

"They are real love songs," the Poet offered in defense.

"No, no. They are what you fancy should be real. You have smelt the fragrance of a thousand blossoms in love's garden—but you have always been on the other side of the wall."

"You will not even allow me a glance through the barred gate?"

"No, not even that,' she said, severely. "Philanderings and flirtations are but the faint whiffs of the perfume floating over the wall. They die very easily. I think you have no heart at all, Aubrey."

He grimaced disagreement.

"I am sure of it," she added, emphatically. "And yet you write—I am angry at every tear, and at every sigh, and at every smile, of which you cheat me!"

"But I do?' he asked, a trifle eagerly.

"Yes. But I feel the fraud all the time. Of course it is mostly myself. I think of Bob when I read."

"Yes, they all think of Bob," the Poet said, and if there was a sadness in his tone it was so very slight that it was unguessed by her. "Bob sells me. Bob is really a very useful chap."

"He comes home in a month," she volunteered.

"I am glad, Elf," he said.

She smiled at the term. It was the Poet's own, invented for her ever so long ago, at least two years before she married Bob, the Poet's friend.

"Of course you are. You are his friend—and mine. I have been outrageously lucky to have such a husband and such a friend."

"The friend is a fraud we determined."

"Not to me," she answered smiling. "You are quite transparent to me. I see all your little tricks—it is like standing at the back of you when you are acting to an audience in front."

He made a wry face and she laughed.

"Is it not good to be understood?" she went on rapidly, making a pretty play with flutttering hands and laughing eyes. "Aren't you glad that some one knows you quite intimately? There are so many who fancy they know the poet's heart, and I stand unseen and grin behind you because I know you haven't any at all. It is all art."

"You have found me out, Elf," he said, soberly. "It really is all art—all gold and cream and big margins and trick. Up here sometimes I have a regular orgie of being myself. No one sees me but the stars. I open my windows to them. and they are horribly shocked. and draw clouds over themselves quickly. I read evening papers and my bank book by the aid of a lamp that illumines and does not choke light."

She clasped her hands.

He took up the slim volume.

"These are well done, aren't they? We know that, and we know that they are frauds. Because I have no heart."

"Because you have no heart," the Elf repeated. "I wonder what it feels like. Is it like acting charades?"

"Not quite."

"But it is making beli [illegible]"

"Yes—in a way. It [illegible] lieve so well that sometim [illegible] see the garden although one is o [illegible] side with the bare, bald wall between. And no charades ever did the make-believe quite like that."

The Poet's voice had odd cadences in it sometimes.

"Perhaps some day you will discover it."

"Perhaps."

"And come into the garden. Bob and I will come to meet you."

"If you see me."

"Of course we shall see you.'

"There must be hundreds wandering round. let in on sufferance. The gardener has said to them, 'You can have a look r'ound, but you musn't touch.' That is depressing. I don't think you would recognize me if I were one of the depressed; I should be chastened by a humility unto which I was not born."

"And—Oh, what is that quaint old box?"

She pointed to the top shelf of the bureau. An ivory box, yellow with age, and carved all over by Indian figures and Indian patience rested there in an exalted loneliness.

"That," he answered, slowly, "is a box."

She laughed a happy. irresponsible laugh, with something of inquiry in it.

"It is a curious premature sarcophagus," he continued, with the wooden voice of a guide.

She wheeled around and stared at it.

"I do not know what you mean. But if you stand on this grandfatherly chair you can hand it down to me. Then I can hold its mysteries and know."

"You are like a huge bumble bee in the web of a diligent and respectable spider. You have broken down my little laborious web of mysteries all but one small corner. You must now know that."

"Then do more showman, please, before I go."

"My little ewe lamb, Elf. Steal not from me the last of my mysteries," the Poet implored.

"Before I go," she said severely, bunching into one small hand a parasol, a blue stoned chain purse with a defective catch, a handkerchief, and the little slim volume.

"It is a curious premature sarcophagus," he repeated, hurriedly. "It contains that which is more precious than the colors of a rainbow, and more beautiful than the lisped live words of fairies. It holds enshrined the heart of the Poet."

"It holds your heart?" queried she, in a crescendo of incredulity.

"Even mine, Elf."

"But you have none."

"Not now. I keep it there on the top shelf. It was inconvenient. What can a poor Poet do with a heart? The great public would not like it, for it would creep into his songs, and we all know, oh, wise Elf! that there is nothing so unreal as the truth. So I took it out of my breast and put it up there in the ivory tomb. I am very proud, of it, because it proves that I was once as other men.'

"What use did you make of it, Aubrey?"

"The use that foolish children make of toys—I broke it."

"Nonsense! I believe it never woke."

"Perhaps not. But its dreams were beautiful."

"The tomb is empty. I am quite sure sure of it. You are only trying to forget that I am not an audience, but the Elf who knows."

"Ah, true—I had forgotten. The tomb is empty. But there is a fragrance of violets long since outworn. I beseech you, iconoclast of a bumble bee, grant me a fragrance to treasure in my tomb."

"Not even that," she answered, rigorously. "You must not make believe to me. Bob and I are practical people. We know the management and like to see the scene set. and all the jewels laid out in the rude glare of day."

"You have the real—let me, I beseech you, have a little fragrance with my make believe."

"Yes, I have the real," she said, with a low resonance of voice.

"If the Poet cheats the whole world, let him cheat himself."

"The tomb is empty. And I must go."

"The tomb is empty," he acknowledged. "Not even ashes."

She paused at the doorway.

"We have talked a great deal of nonsense,' she said. "It is refreshing to talk nonsense when one is practical."

"What can one talk but nonsense to an Elf?" he asked. And she went down to the world of purple haze and mysterious lights stringing the streets.

He went back and gazed at the ivory box. Some of the shadows had stolen into his face.

Two months afterward the Poet tried to do something only remotely akin to poetry anl failed. A small child, led by a butterfly followed her passionate desire across the track of a runaway horse. The child, unconscious of the danger, crosed safely. The Poet who cares for small people. clutched at the severing reins. He missed the reins but reached the last knowledge of all.

Bob came home gravely to Elf. He had been to the Poet's room.

"In his will,"—with them the Poet was always unnamed, for there was

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only one he so intimate—'he desired a little carved ivory box standing on the top shelf of the bureau to be buried with him. I took it down and the lil opened. Inside was a water-color sketch unfinished. It was your face, Elf."

She opened her big blue eyes with sudden illumination.

"The tomb of the heart of the Poet," she whispered very softly.

So the Elf knew the last of the Poet's mysteries.—Madame.

THE CHILD'S BATH.

Too little attention is given to the child's bath. Mothers who are ignorant of the hygenic principles of restoring circulation. after bathing, too often lay the seeds of disorder in their little ones which develop distressing complications. The child should never be soused in a tub of real cold water. The temperature of the bath should be comfortable to the skin, not warm, but free from chill. Introduce the baby to the bath tub by degrees. Let it splash the water with it feet first and if it shows an inclination to withdraw quickly, depend upon it, the water is too cold for its sensitive skin. Do not permit the baby to remain in the bath for over four or five minutes. rub the body gently with the hands all the time. to keep up circulation. As soon as taken from the water throw a soft flannel wrapper around the body. The room should be warm and a sponge wet in cool water rubbed over the head and face. Rub the body dry with soft cloth then use the hands to promote circulation until the skin is aglow with a rich color. We must remember, however, that the skin of the child is sensitive and will not bear rough handling. Cleanliness is the first requisite in building a healthy constitution. The child if weak may be aided wonderfully by the bath or it may be harmed if proper precautions are not taken in the start.

HEALING POWER OF THE SUN.

People generally do not realize the power of the sun to heal.

Rays of the sun contain heat and chemical rays, as well as light rays. The heat rays act powerfully upon the glands and vessels of the skin, while the chemical rays influence the nervous system in a remarkable way. It is the chemical rays which cause so-called sunburn.

The sun is the source of energy in the world. The marvelous energy manifested in plant life is derived from the sun acting upon the green parts to organize and vitiate the elements of the earth and air into living substances. The same energy of the sunlight is essential to animal life, invigorating and vitalizing the tissues and quickening all the processes of life. The sun bath is now a well recognized and much valued therapeutic agent.

In this form of treatment the whole body is exposed to the direct action of the sun's rays. Persons who are not accustomed to exposure to the sun and individuals who have light hair and light skins, should make the first exposure to the sun of short duration —ten or fifteen minutes. Longer exposures are likely to produce sunburn, excepting the inconvenience occasioned by it. The pigmentation of the skin induced by sunburn protects the skin from further injury in this way.

The body may be exposed either in the open air or before a window. When the sun's rays are so intense that the heat is depressing, the heat rays may be filtered out by means of a blue-glass screen placed between the patient and the sun.

SCARLET FEVER GERMS.

In a farm house in one of the New England states a case of scarlet fever unexpectedly developed not long ago. On seeking for its origin the physician found that some old cotton quilts. laid away in the garret for years, had recently been taken down and aired and put to use by the family. These bed coverings it was remembered, had been put away after a siege of this disease. This is only one of the many instances that could be related. to show how long the infection agent retains its vitality, and how common a thing it is for scarlet fever to be disseminated by bedding and other objects These quilts should have been burned as soon as the first patients had recovered.

The children of a certain physician were one day allowed to unlock an antique secretary that had not been opened for years. In it they found tresses of hair that had been cut from the heads of children who died twenty years before of scarlet fever. In a few days they were both stricken with this dread disease. The ease with which this disease is disseminated is appalling. It has been known to be spread to a neighboring house simply from the airing of bed clothing in a window. Infected clothing should never be washed with any other. The disease has been transmitted in this way. A bouquet of flowers that was sent from a scarlet fever room to a hospital carried the disease.—Dr. Emma E. Walker in Good Housekeeping.

PAPER NAPKINS.

Everyone knows the value of paper napkins, and in many households the useful and inexpensive little squares have been substituted for linen napkins for breakfast and luncheon. A few independent souls use the paper napkins altogether for doilies as well as napkins. It remained for a school to introduce a new use for paper. The towels used in this school are all paper. They are about twice the size of the napkins. and are no heavier. Great bunches of them hang in the toilet rooms of the schools attached to hooks, something like those on letter files. About two of the towels are needed to dry the hands and face. After using they are simply crumpled and thrown into the waste paper basket at hand. The sanitary advantage of the paper towels for public washrooms, school and institution use is readily apparent. Why are they not just the thing for the kitchen? Purchased in quantities they cost about an eighth of a cent apiece, and the saving in laundering is even greater than the cost of buying.

Mrs. Gaswell—I wish I knew of something that would improve my husband's appetite.

Mrs. Upmore—I believe jiu jitsiu would help him.

Mrs. Gaswell—That's something I never heard of. How do you cook it? —Chicago Chronicle.

The teacher who opens the doors and windows of the school room each noon hour will have fewer absentees on account of sickness.

The Japanese home is seldom more than one story, and the rooms are separated by paper shutters or partitions which fit into grooves and may be easily removed.

"An' what will me wages be?"

"Six dollars a week."

"Thursday afthernoon an' evenin' off?"

" Yes."

"Does yez send the washin' out?"

"Yes. And we have no children. Is there anything else you'd like to know?"

"Let me see a photygraph av yer husband."—Cleveland Leader.

Eva—"Did you ever kiss a girl through her veil?"

Dick—"Yes, and got quite an impression.

Eva—"Of the girl?"

Dick—"No, of the veil."

The average woman is either worried to death because she has no servants, or because she has.—Philadelphia Record.

First milliner—I wish women had the right to vote like men.

Second Milliner—Why?

First Milliner—I think it would help our business if they bet hats on the election.—New York Mail.

A young man who wants to settle down should always be willing first to settle up.—Desert News.

The best way to close an argument with some people is to agree with them.

Look well to clean shoes and a new hat. These tell the story of good taste.

Teacher—"Who knows what triplets are?"

Teacher's Pet—"I know; two twins and one left over."—Woman's Home Companion for April.

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Following are a few:

Chicago	$33.00	Kansas City & Leavenworth	$25.00
St. Louis	30.00	St. Joseph & Atchison	25.00
Galveston	26.45	Council Bluffs & Omaha	25.00
Dallas, Houston and Fort Worth			25.00
Nearly all points in Kansas, Oklahoma and Indian Territory			25.00

Colonist rates are also in effect from all points east of Chicago and south of the Ohio river.

Santa Fe Agents in California will take deposits of money to cover price of tickets, which will be promptly furnished to passengers at any point from which these rates are in effect.

California illustrated literature mailed free to any address or may be had from Santa Fe representatives.

Tourist Sleeping Car Lines

Colonist tickets are honored in tourist sleeping cars which run via the Santa Fe to Los Angeles and San Francisco.

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There is no better way for the farmer to widen the circle of his influence than to join with his neighbors in building a telephone line. It extends the neighborhood circle and enables each one to receive advantages that cannot be had in any other way. The cost is meager compared with the benefits of a good telephone line, and progressive farmers, who are awake to their own interests, are building many such lines.

Stromberg-Carlson Telephones

are used on nearly all farmers' lines because they have been found to be the most suitable telephones for that purpose. It don't pay to experiment when you can get Stromberg-Carlson Telephones and be sure of good service. Start off with the best and your line will always work satisfactorily. You will also avoid the expense of changing instruments in a few months. Book 71-I, "How the Telephone Helps the Farmer," tells how to organize, build, and operate a farmer's line. It's free, and every farmer should have a copy.

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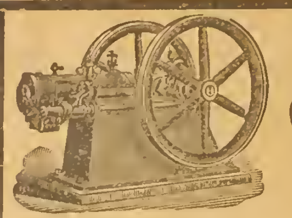

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Los Angeles, California.

The Produce Markets

Los Angeles Markets.

Los Angeles, March 22,, 1906.

Butter has again tumbled, quotations falling off 5 cents per 2-lb roll since last week under the influence of the continued heavy rains. Cheese is weak in sympathy with butter and a slight decline is expected.

Eggs are in good supply and the market is weak.

Vegetables are plentiful especially rhubarb and asparagus.

Butter.

B. of T. Creamery, per roll	50
Valley Creamery, fancy	50
Valley Storage	47½@50

Cheese.

Cal. 3-lb. hand	17½
Cal. Young America	16½
California Anchor	15½
Northern	16@17
Domestic Swiss	19@20
Imported do	26½@27

Eggs.

Eggs, Fresh Ranch	19

Poultry.

Fryers, 2 1-2 lbs	18@19
Broilers, under 2 lbs., per lb.	19@21
Young Roosters. per lb.,	16@17
Hens. per lb.	14
Ducks, per lb.	14@15
Geese	14@15
Turkeys	19

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock:

Hogs, 200 lbs.	6
Prime Steers	4½
Cows	3¼
Calves, per lb	5
Sheep, ewes, per head	4.50
Wethers	5.00

Potatoes.

Northern, per sack	1.65@1.75
Locals, per cwt	1.10@1.25
Locals, new, per box	2.25
Sweets, white, per cwt	2.40@2.50
Sweets, yellow, cwt.	2.00

Vegetables.

Onions, Aust. Brown, cwt.	1.50@1.75
Onions, yellow, cwt.	1.75
Garlic	7@10
Cabbage, per sack	1.00@1.10
Cauliflower, per doz.	40@75
Asparagus,	8@10
Lettuce, per doz	15@25
Bell Peppers	15
Chili, Green	20
Cucumbers, per doz.	2.00@2.50
Radishes, per doz.	20@30
Lima Beans	10@15
String eBans	15@17
Beets	40
Green Onions, doz. bunches	20@25
Carrots, doz. bunches	40
Turnips, doz. bunches	30@40
Celery, per doz.	35@40
Peas, per lb.	4@4½
Oyster Plant	40
Tomatoes, local	1.10@1.25
Parsley, per. doz. bunches	60
Pie Pumpkin, per lb.	01

Citrus Fruits.

Lemons, standard	75@1.00
Lemons, choice	1.00@1.25
Lemons, fancy	1.25@1.40
Grapefruit	1.75@3.00
Navels, extra fancy	2.25@2.50
Navels, choice	1.40@1.60

Fresh Fruits.

Apples, Bellefleur	1.75@1.85
Fall Pippins	1.15@1.40
Red Pearman	1.00@1.50
Strawberries, per box	8@10
Guavas, per basket	4@8
Pear, Winter Nellis, per lb.	5@6

Dried Fruit.

Apples, evaporated, ex cl., 9; ch, 8½.

Apricots, ex ch, 11; fy, 8½; ch, 7½.

Peaches, fy, 8½@10½; ch. 7½@8.

Santa Clara Prunes, 30-40, 8c, 40-50, 7; 50-60, 6c; 60-70, 5½.

Loose Muscatel Raisins, 2-crown 4½; 3-crown, 5; 4-crown, 6.

Beans, Dried.

Limas	5.00@5.50
Pinks, fancy	2.50@2.65
Lady Washington	3.00@3.10
Small White	3.50@3.75
Black Eyes	5.50@6.00

Honey.

Honey, comb frames	14½@15
White, strained, per lb.	6½@7
Light Amber	6
Amber	5
Beeswax	27

Hay.

Barley, No. 1	14.00@15.00
Alfalfa, local	11.00
Alfalfa, Northern	10.59@11.00
Wheat, No. 1	16.00
Tame Oat	12.00@20.00

Grain.

Selling prices of mill stuffs f. o. b. cars L. A., in quantity, are:

Rolled Barley	1.35
Bran	1.25
Feed Corn Meal	1.45
Shorts	1.40
Wheat, per cwt	1.60
Cracked Corn	1.40
Oil Cake Meal	2.10
Cocoanut Meal	1.55

San Francisco Markets.

San Francisco, March 21, 1906.

Butter.

Butter receipts have been liberal and prices have dropped from two to three cents over last quotations.

Fresh California extras	23½
Fresh California, Firsts	23
Fresh California, Seconds	22
Eastern extras	22½

Cheese.

Cheese has also taken a slump and is down from one to two cents.

California, new	12½
California firsts	11½
California seconds	11
Eastern Cheddars	16
Storage, California	14
Storage, eastern	16

Eggs.

Eggs are also lower, but the demand is good.

Eggs, (fresh ranch)	18
Firsts	17
Storage, Eastern	14

Poultry.

Old Roosters, per doz.	4.50@5.50
Young Roosters, per doz.	6.00@7.50
Hens, per doz.	5.00@7.50
Ducks, per doz.	5.00@7.00
Turkeys, per lb.	15@17
Geese, per pair,	2.00@2.50

Live Stock.

Hogs, per lb., 80 to 130 lbs.	7
Hogs, per lb., to 250 lbs.	7¼
Hogs. pr lb., 250 to 350 lbs.	6¾
Hogs, per lb., rough heavy	5
Prime Steers, lb	8½
Prime Steers, lb	8
Cows, per lb.	6½
Calves, lb.	5@5½
Sheep, ewes, per lb.	4½@5
Lambs, per lb	5@7
Wethers, per lb.	5@5½

Potatoes.

River Burbanks	40@75
Oregon Burbanks	75@1.05
Salinas Burbanks	1.00@1.50
Sweets, Merced	75@1.25

Vegetables.

Asparagus	6
Rhubarb, per box	65@85
Onions, Oregon, per sack	1.00@1.50
Onions, Australian	3.50
Bell Peppers, green	25
Cucumbers, per doz.	75@1.00
Tomatoes, per box	1.25@1.75

String Beans	.15
Wax Beans	.12
Summer Squash, per box	1.25
Green Peas, per lb.	5@10

Citrus Fruits.

Navels, fancy	2.50@3.50
Seedlings	1.50@1.75
Lemons, standard	1.00@3.00
Grapefruit	1.50@2.75
Tangerines	1.50@1.75

Fresh Fruits.

Apples are in good demand with prices a trifle higher.

Apples, per box, extra	1.75@2.25
Apples, fancy	1.25@1.65

Beans, Dried.

Beans have also taken a slightly higher price.

Limas	4.60
Pinks	1.90@2.90
Small Whites	3.15@3.25
Black Eyes	4.40@4.50
Bayos	3.40@3.50
Red Kidney	3.50@3.75
Horse eBans	1.50@1.75

Hay.

Barley, new	$8.00@11.00
Alfalfa	11.00@12.50
Wheat	11.00@16.00
Oats	8.50@12.50

Grain.

Wheat	1.65
Barley	1.35
Corn, California, New Large	1.35
Oats	1.50@1.90
Rye	1.45@1.52
Rolled Barley, per ton	25.00@26.00
Bran, per ton,	19.50@20.50
Feed Corn Meal, per ton	20.50@30.50
Middlings	½ 26@30
Cracked Corn, per ton	28.50
Oil Cake Meal, per ton	37.00
Cocoanut Cake, per ton	23.00

Hops.

The price of desirable grades is nominal at 8@12½ per lb., according to quality.

CITRUS MARKETS

NEW YORK, March 20.—The orange market has not fluctuated much in the week just closed. Sellers have had the advantage of good weather all the week and business has been on a substantial basis. Outside buyers have been moderately numerous and there has been a good city trade. The result has been that the market has been fairly active and prices have rules steady and higher than they were the week previous on an average.

California navels have continued strong and active under this satisfactory demand and situation. There has been a continuation of the pre.ious good market and the week closed with no accumulations and with sales more than up to the average. Another thing has helped the market The arrivals are running uniformly lighter every week, as compared with last year at the same time. The strengthening of the market due to this season has created a better feeling all along the line and there is much enthusiasm regarding the continuation of the present good conditions and possibly an advance in prices as the season proceeds.

Fifiteen cars were sold at auction today. The market is very strong. The weather is favorable. The auction sale of foreign lemons has been postponed until Wednesday.

NAVELS, (Ventilated.)	Averages.
Fountain, ch, Moffatt Frt Co.	$3.20
Santa Fe, st., Moffatt Frt Co.	2.90
Santa Fe, st., Moffatt Frt Co.	3.00
Tiger Head, xc, I. L. Lyon & Son.	2.30
Lion Head, xf, I. L. Lyon & Son.	3.15
Success, xc, F. H. Speich & Co.	2.40
Partridge, xc, C.C.U. Fullerton.	2.65
Gavilan, fy, San Jacinto L. Co.	2.55
Truth xf, San Jacinto Land Co.	2.65
Criterion, xc, Penn Fruit Co.	2.90
Clover, xc, Redlands O.G.A.	2.95
Isis, xf, F. H. Speich & Co.	3.25
Fountain, ch, Moffatt Frt Co.	3.10
NAVELS (Iced.)	
Peacock, xc, Whortley & Strong	2.50
Moreno, Whortley & Strong	2.70
Magnolia, xf, Worthley & Strong	3.30
Golden Eagle, st, C. C. Chapman.	2.85
Old Mission, ch, C. C. Chapman.	2.90
iCtrus Belle, ch, Ind. Frt. Co.	2.90
BLOODS (Whole Boxes.)	
Anita, fy, G. R. Hand & Co.	2.60
BLOODS (Half Boxes)	
Mission Bells, xc, A. B. Chapman	1.30
LEMONS.	
Santa Fe, st, Moffatt Frt Co.	2.70
Fountain, ch, Moffatt Frt Co.	3.05
Squirrel, fy, A. H. Frut Co.	2.85
Silver Lemon, xf, A. H. Fruit Co.	3.35
SEEDLINGS (Iced.)	
Mission Bells, xc, A. B. Chapman.	2.50
TANGERINES	
Lion Head, xf, I. L. Lyon & Son	2.65
GRAPEFRUIT	
Rialto Girl. fy, Moffatt Frt Co	3.50

Lilly plant roots are not sticks but roots. They are fibrous and they grow. See advertisement of Japanese Honeysuckle, page 273.

The foreign market will be exceptoinally good this season. Already large orders have been placed with the Eastern dealers by the wholesalers of Germany and other European countries. Germany has taken the lead thus far and promises to greatly surpass her imports of prunes for last year. The California prune has won great favors with the people of Germany, and they are willing to pay the prices asked for the goods. England, too, has already sent in orders to Eastern representatives and she will import heavily of California dried fruits. The price promises to be good this year because of the new demand.—California Grocers' Advocate.

Cold weather and storms at San Jose have injured apricot and prune crops considerably.

A Better Way
To Go East

Than is offered by the Salt Lake Route may be available some day but not at present. Let us suggest some reasons why you should go that way on your next trip.

Because, if you came west via the Salt Lake Route you must have been so well satisfied with the service and comfort enjoyed that you want to return the same way.

Because, if you came west some other way you surely should return via the Salt Lake Route to see a different part of the country.

Because, it traverses a country full of interest, pictiresque and unique in many ways.

Because, it is the short line via Salt Lake City, where you may stop and see the sights of that Mormon city without extra expense.

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Because, well there are other reasons which any Salt Lake Route Agent will be glad to explain to you. Just call on the nearest one for more particulars, literature, etc., or write

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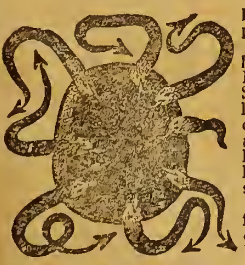

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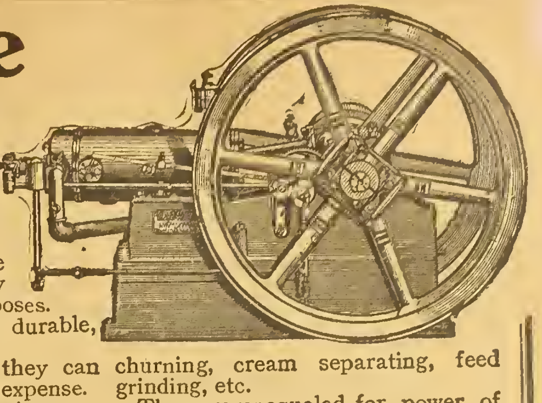

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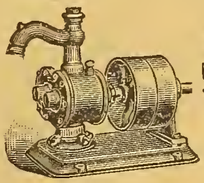

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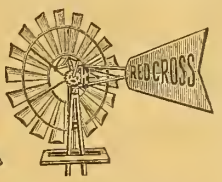

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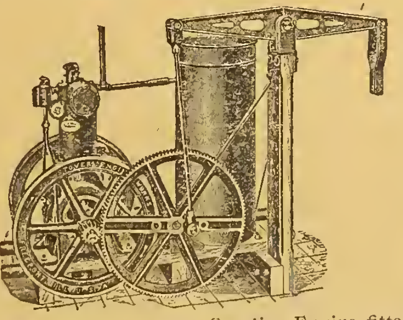

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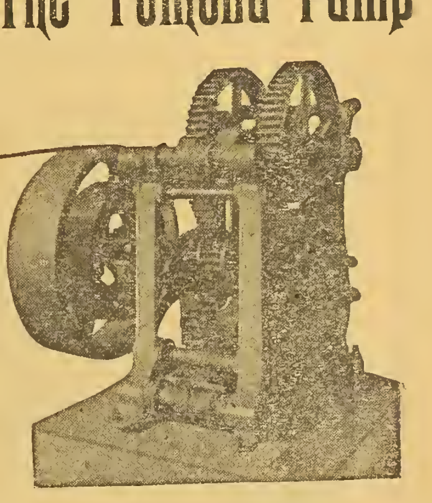

PORTERVILLE, CAL. Mar. 1st, 1906

The Pomona Manufacturing Company of Pomona California installed a deep well pump for me last October consisting of a No 28 head and 10 inch cylinder placed ninety two feet below the surface. It lifts fifty five inches of water from seventy five feet or more below the ground and forces it through a pipe line one half mile long sixty five feet above the pump. It has been run for four months and has been using about twenty six horse power for the whole plant.

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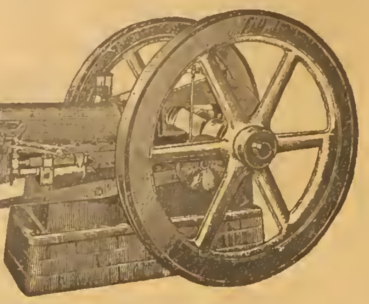

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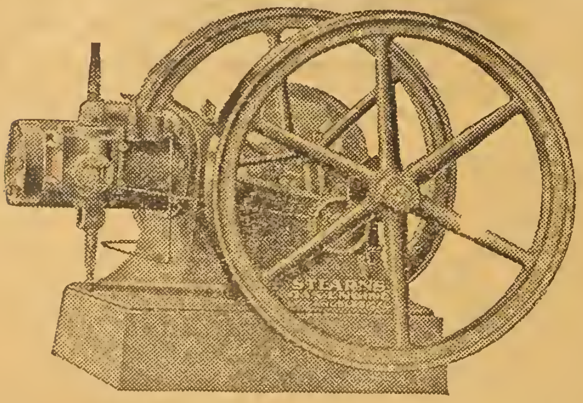

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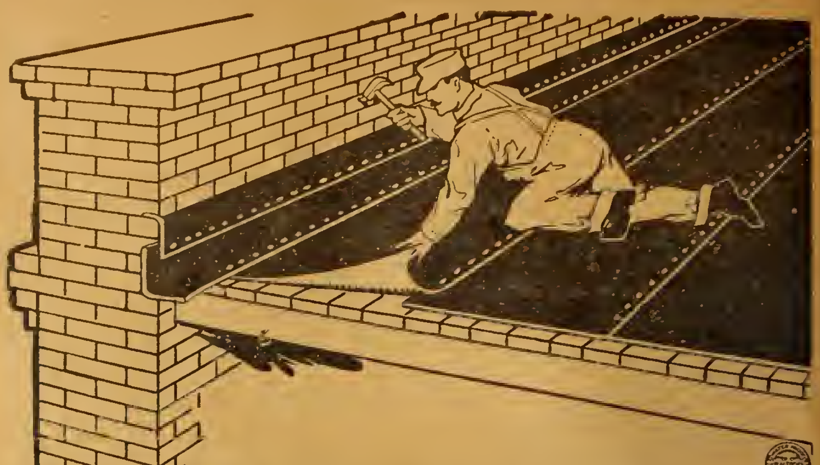

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It is the best ready-to-lay roofing on the market, both in the material that goes into making it and the knowing how to make a roofing which will make a roof weather and water-proof; that will stand heat and cold; resist fire; and make the building it covers warmer in winter and cooler in summer. Any one can lay it. It is the only roofing that meets all cases.

How about your hog house, for example? It pays to have a good warm hog house. Why not cover it over—roof and sides—with MALTHOID? It will be absolutely dry; no wind or snow can go through it. The loss of one hog will cost you more than the cost of the MALTHOID to cover it. How about the poultry house, too? Will it be warm enough in zero weather? No building is too good to be covered with MALTHOID; it is so cheap it can be used on any shed.

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CALIFORNIA CULTIVATOR

DEVOTED TO
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LOS ANGELES MARCH 30, 1906 SAN FRANCISCO

GOOD TYPE OF THE MORTGAGE LIFTER.

Secretary Wilson of the Agricultural Department at Washington, puts the hog second in point of agricultural profit among the farm crops of the country.

For the past quarter of a century the Middle West farmers have been pushing the hog industry with as great activity as they have the cattle interest, and today they are rewarded in a greater percent of profit than is received from any other crop.

In California the hog and hen are forging to the front in the same ratio of excellence as they are in the East, with absolute certainty of becoming the staple industries of the State.

NOTES FROM EL CENTRO.

I have been living for some little time now at El Centro, California, in the Imperial Valley and have noted nothing in your columns in regard to the rapid growth and development of this place. There are some things here quite worthy of mention.

A very commodious and up-to-date ice plant with creamery and cold storage in connection is being constructed here and it is intended to have it ready for operation by the middle of April.

There is a flourishing creamery Association here and they have pledged the milk of a thousand cows for the prospective creamery.

A melon association of forty-five members has recently been organized and at least four hundred acres of cantaloupes are planted in this immediate vicinity by its members.

The melons will be packed by the association in a uniform style, plans for a substantial packing house being already completed.—J. O. B.

AN OLD, OLD STORY.

Fullerton, Cal., March 3, 1906.
Cultivator Publishing Co:

Will you please remove my half inch advertisement and send bill to date. Have sold all the stock I have to spare and booked orders for all first clutch of eggs. I have lots of stock for eggs and thought I would be able to supply all applicants, but evidently when one advertises in the Cultivator they should first double their supply. Yours very truly—Mrs. N. Frank Morse.

BARBED WIRE FENCES.

The man who uses ordinary soap for shaving will soon find out how a horse feels when he gets mixed up with a barbed wire fence. You can buy a new horse but you cannot buy a new face, no matter how irritated or blotchy it gets or how badly it itches. Avoid laundry or toilet soap for shaving as you would a barbed wire fence. William's Shaving Soap is made especially for shaving and in another column of this paper is an offer of a free trial sample. "For the sake of your face, try it."

E. M. Burnell of South Pasadena, Cal., is offering his entire flock of Buff Orpingtons for sale. Mr. B. is one of the leading and reliable fanciers of Southern California and his stock has a fine reputation. See his ad in this issue.

Wm. B. Dean, whose establishment was burned out a few weeks ago is now located at 2213 Central ave. Los Angeles where he is better located than before in the manufacture of Dean's Pacific Incubators and Brooders. His new catalogue containing illustrated and descriptive matter gives fully the reasons for claiming that the Pacific is the best and cheapest machine for the production of chicks on the coast.

If you want first class S. C. White Leghorn eggs or stock, write L. D. Pettit, manager Monte Vista Poultry Farm, Corning, Cal. His advertisement appears on another page of this paper.

PORTABLE BUILDINGS.

The Burnham-Standeford Co. of Oakland, California, advertise their portable buildings, of various designs in this paper. The firm is an old one, well established and are shipping all over the State. The buildings are inexpensive, made from first class materials and give the best of satisfaction. They build anything from a church to a poultry house. Write them for their catalogue and prices and they will save you money.

A Few Remarks About the Care of Chicks

By W. G. Aldrich

Select your eggs from strong, mature matings, as free from contagions as possible. Then incubate as near right as possible, as it is an easy matter to ruin your chicks by improper treatment during this period; don't crowd, or try to improve your machine, but adhere strictly to the instructions.

When your hatch is done, kill all the cripples and drags, as they are no good and are a nuisance to the others. This should be done as you remove the chicks to the brooder.

TEMPERATURE OF BROODER

Most people heat to 90 degrees, but I prefer only 80 to 85 degrees. Then look to the comfort of the little ones, just the same as you would to a child. I start to feed with charcoal and fine grit about 12 to 15 hours after the hatch is done. by throwing it loose in the brooder. Then in about 12 hours more, start with Coulson's Special Dry Ready-Mixed Chick Feed, in a litter of cut straw; keeping clean, fresh water constantly at hand.

Then the first consideration is cleanliness, which is the keynote to the Poultry Industry from "A" to "Z". Old and true is the saying: "Cleanliness is next to Godliness." It certainly is in the chicken business.

CONSIDER THE HEAT

The regulation of heat is the regulation of comfort. Strive to keep the little ones contented. People are apt to overdo the heat, and keep the brooders TOO WARM at night; not so in the daytime, as the chicks are out and in all the time. But at night the birds themselves, maintain the warmth in the brooder, but as soon as they leave the brooder in the morning, it cools off. Then the heat must be turned on early, because if the chicks return to a cold home, they will crowd together, and pile up, in their efforts to get warm. and then look out for trouble. At night turn the blaze of the lamp down real low, just low enough so it don't go out. Then the first thing in the morning when you get up, go out and turn up the blaze, so as to warm up the brooder; so that it will be warm enough to be comfortable for the chicks; say about 85 degrees. By experience one can tell by placing the hand in the brooder, whether it is comfortable for the chicks or not.

In the rainy season I keep my brooders warm all day, even until the birds are quite feathered, but put out the blaze about half past four or five o'clock, before the chicks go to roost at night, so as to let the brooders cool; because if they find it too warm, they will not go in, and in case they do stay outside, they will get too cool. Before morning, they take cold, contract Roup, get sick, and die off, or droop around and make no growth. They must be kept in comfort or they will not do well, and will not thrive as they are expected to do.

ALWAYS GET THE BEST

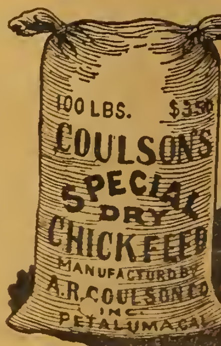
Do not try to be too cheap; get good feed (Coulson's Special Dry Chick Feed), good oil, disinfect often; do not let expense stand before comfort. (A good disinfectant to use is Coulson's Lice Killer, sprayed with an Atomizer Spray Pump.)

No matter how good and strong your little chicks are today, tomorrow may see them off wrong, without any apparent cause, but there is a cause, just the same. Perhaps, worms have attacked them, so give them a little Coulson's Roup Cure in the water, about four to six drops to each quart; start when they are three days old, and continue for three weeks. Along these lines you raise around 75 to 80 per cent of them.

People will find that different lots of chicks will require a little difference in temperature, but strive to keep them comfortable; be sure to keep them clean, and the rest is easy.

MORE REMARKS ABOUT THE FEED

Feed the Coulson's Dry Chick Feed four or five times a day for the first ten days; after they are two weeks old, feed them one meal a day of Coulson's Growing Chick Feed, and three times with some of Coulson's Special. When they get to be two months old, feed Coulson's Growing Chick Feed, by wetting it with milk or water, to make a mash food and feed cracked wheat or whole twice a day. When they are three months old, they can be fed the same as the hens, Coulson's Egg Food, in the morning, and wheat and other grains for the other meals.



One Cent

a chick is all that it costs to feed the chick the first 25 days on Coulson's Special Chick Feed. Ask your dealer for it.

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COULSON POULTRY AND STOCK FOOD CO., PETALUMA, CAL.

CALIFORNIA CULTIVATOR

Vol. XXVI—No. 13 LOS ANGELES, CAL., FRIDAY, MARCH 30, 1906 Subscription $1 a Year

The Silk Worm Industry in California

By S. R. Bellany

During the past summer I was led to make some experiments in the production of silk in Sacramento and the results have been so very much better than I had expected. that I am anxious to impress upon the people of this State the fact that they have in sericulture a great and as yet untouched source of wealth. I was led to make this experiment from the fact that I have been for years convinced that the climate of California was especially adapted for the cultivation of the silkworm and its product, and the results have been a surprise even to myself for they exceeded my most sanguine expectations. It is in order that more may become known of the possibilities of this great industry that I present to you today a brief review of my work. with some facts and figures bearing on sericulture and its posibilities in California.

I was born and raised in the southern part of Switzerland where silk raising is carried on, on a large scale, and the fascinating nature of the work after many years is still in me. I found a fair supply of mulberry leaves in the streets of Sacramento and started in silk raising, and to my surprise I met with the most encouraging results, seldom met with in the silk-raising belt of Europe. Expert sericulturists in Europe consider they have a good crop when they lose from twenty-five to thirty per cent. of the worms; notwithstanding that I labored under difficulties, in a house not equipped for the purpose, and the trees where I gathered the leaves for feeding the worms having been neglected for years, yet with all these disadvantages, I have not lost a worm, and they spun a solid cocoon with a fine grade of silk that cannot be excelled anywhere.

Silk raising could be carried on, on a large scale as well as in a small way for there is no limit to the amount of worms one person can care for in a suitable room fitted for the purpose

Raising silkworms on a large scale could be carried on as follows: Set two ozs. or more of silkworm eggs in an incubator about the time the mulberry leaves begin to grow out. In three days the eggs will have hatched out and the rearing will then be in progress; in a week or ten days place another two ounces or more of eggs in the incubator and continue the propagation till about the middle of August, or as long as the season will permit. Within fifty days the first set of worms will have spun, and on an average one hundred and twenty-five to one hundred and fifty pounds of green cocoons per ounce of silkworm eggs can be produced. In one ounce of silkworm eggs there are about one hundred thousand worms, which will require about sixteen hundred pounds of healthy mulberry leaves for rearing them. Five or six mulberry trees of moderate size will grow enough leaves to feed the worms from one ounce of eggs.

Morus albus is the tree of the right variety. It is seedless, white, and will grow anywhere. It is particularly adapted for field and farm border, but should be planted away from dust, on levee and river banks, and still better around homes. For myself, I would rather have the product from one acre of mulberry trees than of two acres in any other vegetation.

Silk-raising is an industry of such a fascinating nature, that I have no doubt the women of our farming classes would, in a short time, become as expert silk-raisers as their sisters in Europe; not only the farming classes, but our city women who depend on their daily toil, when their labor is not wanted at other enterprises, will find profitable employment at home, and I think to better advantage, particularly those families who have school children, who could before and after school. gather leaves for the silk spinner. It would be a matter of only a short time when the young generation would understand the silk worm's ways and the foundation of an important industry will then have been laid. never to be shattered. It is an easy task for three or four expert hands to raise from one to two tons of cocoons in one season. I would be willing to furnish any one who wished to engage in silk raising with the required amount and grade of silk worm eggs, and the proper in- them successfully, and I would be contented with a part of the product for my compensation.

In order to progress with the industry a filature, or reeling factory should be established so that the cocoons could be reeled into raw silk and to which the green cocoons could be shipped. I do not believe that there is a filature in the United States with the exception of a small experimental reel at the Agricultural Department, Washington, D. C., for I, with the assistance of the Sacramento Chamber of Commerce, have searched the country from the Pacific to the Atlantic Coast, looking for a filature, so that I could have some of the cocoons which I raised, reeled, in order to have an American flag made for the Admission Day event, but, to my disappointment, we could not find one. In the United States there is no market for cocoons, but there is a market for raw silk. The U. S. Department of Agriculture at Washington, D. C., offered to buy the dry cocoons at 75 cents to $1.00 per pound. I have been informed by a European sericulturist that this sum is less than the foreign market price for cocoons, but a market for cocoons could be made by establishing a reeling factory.

Courtesy Sonoma County Board of Trade

Sonoma County Potatoes, Grown Without Irrigation.

Bounty on Cocoons

The raw silk market in the United States would naturally control the cocoon market, but it does not, according to the statistics of the last census, in which the raw silk market of 1900 was $4 per pound. According to that, dry cocoons should be worth at least $1.50 to $1.75 per pound. Such a price may not be enough to encourage silk raising, therefore I would suggest that the State ought to pay whatever would be the difference between the market price of 75 cents to $1 per pound for green cocoons, and price of raw silk. Such a bounty should be maintained until the industry will have developed to such an extent as to fairly supply the market demand at which time it could be discontinued, and a good market for cocoons, raw and manufactured silk will be awaiting us. From the report of the last census it appears that in the neighborhood of sixty million dollars per annum is paid out for imported silk. Why should the United States pay out that sum when California itself could raise forty million dollars worth of silk without in the least interfering with the other industries.

All countries where this industry has become established have been compelled to foster it in its infancy. France did so for a long time and now is reaping its rich reward, for in silk reeling alone, employment is furnished to not less than fifty thousand women and children. Hungary, not many years ago, established its filature and silk culture station. Even in Japan, where the people are earning fifty millions a year in silk culture, the government has its filature and in other ways helps the people to help themselves by its fostering care of this great national industry.

Continued on Page 306

Deciduous Fruit Culture

BY J. W. MILLS, POMONA, CAL.

BROWN ROT IN APPLES.

Editor Cultivator: Will you please inform me through your valuable paper, what is the matter with some of my winter apples? They have little brown spots or streaks through the apple but they never reach the core. It tastes like rot and resembles wormy potatoes very much.—Subscriber, Los Alamos.

You have a fungus that is causing your apples to rot and the only thing for you to do is to spray with Bordeaux mixture. Spray your trees now and again when the fruit is set. The mixture is made by dissolving five pounds of bluestone and five pounds of lime in fifty gallons of water.

FULLER'S ROSE BEETLE.

Editor Cultivator: Will you please tell me of any spray I can use on blackberry bushes when they are in bloom? Can I spray with Paris green without danger of poisoning the fruit spraying to be done while the bushes are in bloom?—R. E. L., Merced.

Paris green applied at blooming time will not poison the fruit but it is liable to injure the bloom. The best way to get rid of the beetles is to tack some sheets of tanglefoot on a light board frame. slip it under the vines and tap with a stick which will cause the beetles to drop. Do this a few times in the morning and you will soon get rid of them. You will have to have two sets of sticky paper, one on each side of the bushes.

PRUNING PEACH TREES LATE.

Editor Cultivator: Kindly tell me in your next issue if it will injure peach trees to prune them now?—Subscriber, Pasadena.

It will not hurt your peach trees to prune them now. Now is the best time The later the pruning is done, the quicker the wounds will heal.

BERMUDA GRASS.

Editor Cultivator: What you say about Bermuda grass is very interesting, crop value, etc. But the kind of land, water, dampness, etc., are Sacramento conditions and not Southern California conditions.

What we want to know is: how will it do on our damp (not over-flow) river bottom, sandy lands; how will it do on our alkali lands (they are damp too); what is the growing season; how many head of stock will it pasture? Take the country west of Los Angels; there is lots of both sandy river bottom land, and more of damp alkali lands, (salt grass lands) I understand there are good Bermuda grass pastures around Fresno. If we could use our waste lands for Bermuda grass, the butter, beef, etc., production could be doubled or more Kindly look the matter up very respectfully,—H. W. D., Santee.

Bermuda grass will stand as much alkali as salt grass when it is once well established and will grow on some of the strongest alkali lands on the desert, in fact it has taken possession in such places where moisture is present, to the exclusion of other vegetation. The growing season is from the time that cold weather ceases in the spring till it comes again in the fall.

GRAFTING WAX.

Editor Cultivator: Can you supply a recipe for making a liquid wax for grafting and covering cuts in trees, and oblige—W. C., Duarte.

Melt one pound of resin over a gentle fire, add to it one ounce of beef tallow and stir well. Take it from the fire, let it cool down and then mix with it a tablespoonful of turpentine and after that add seven ounces of strong alcohol. The alcohol cools it down so rapidly that it will be necessary to warm it again, stirring it constantly. Care is necessary to avoid igniting the alcohol.

Apply with a brush and keep in a tightly corked bottle.

PLANTING A VINEYARD

Various articles relating to starting a vineyard have been going the rounds of the press and we have been asked if we are sure that we are right in advocating the planting of rooted vines rather than planting the cuttings just where we want the vines to grow. Growers who have had experience claim that it pays better to plant cuttings in vineyard form. We are confident that planting rooted vines is the best plan. Young vines with a good and symmetrical root system will out-grow a cutting. With the best of care. 95 per cent is a high average for cuttings, while 99 per cent is not high for rooted vines. One hundred per cent is not uncommon. This difference of 4 per cent on five tons per acre not a high yield for table grapes,—means a difference of 400 pounds of grapes per acre. Good table grapes are worth at least one cent a pound which means a loss of $4 per acre. This $4 will about pay for the cultivation. It costs just as much to cultivate the vacant places as it does when the vines are in.

The argument is advanced that a year is lost, but remember that with vacancies amounting to 4 per cent, from $2 to $4 per acre are being lost as long as the vineyard is maintained, besides think of the time that was lost before the vineyard was planted at all. The chief disadvantage in having an uneven stand is the feature of having an incomplete job always before you. There is considerable satisfaction and an excuse for pride in having a plantation as near perfect as possible.

The good prices realized from table grapes during the past few years will cause much planting during the next two or three years. There will as usual be a certain percentage of mistakes made and questions directed to us indicate that there will be considerable experimental planting.

Certain districts have made a reputation on certain varieties and those prospective growers who are somewhat removed from these districts and expect to have a satisfactory results are liable to suffer loss. For instance, we have received inquiries about planting Cornichon grapes in a sandy, gravelly soil, manner of pruning to make them bear good crops, etc. This is without doubt the case of a man having read the results obtained by some grower who has made money on that particular variety. It is not likely that he conceived the notion of planting them, from any other source. Experience will teach such experimenters that the soil will have to be consulted before the plants. Lodi Tokays and Fresno Emperors have also started the idea that there is money in these varieties where ever they may be planted. When the growers around Fresno first made known the large profits realized from their Emperors, several vineyards of this variety were planted in the light sandy soil of the San Bernardino valley. There has never been any flattering results from this and it would be strange if there would be.

Some five or six years ago, there was quite a stir among grape growers in Southern California over the subject of resistant roots, those which resist the phylloxera. This has died out and practically no more attention is paid to it. At that time, St. George was considered the best resistant stock. it making the most vigorous growth and being quite resistant to the insect that attacks the roots. The experience of growers in France showed that the St. George gave better results for all classes of soil, than any other variety of stock.

About six years ago we gave to a Pomona orange grower who wanted to plant a corner to table grapes, a few St. George vines, advised him to plant them and graft what varieties he wanted, onto them. This he did and he now tells us that his vines have made a fine growth and bear fine crops. He is out practically nothing for his extra trouble and is secure against phylloxera should it ever invade his neighborhood. Had he a large vineyard from which he would have to derive his income, he would surely have a decided sense of security.

These remarks presuppose the invasion of phylloxera. Is it impossible for us to get it? We guess not. The French got it from America and it originated in our native grapes which grow in our canyons and river bottoms.

There is another resistant root which is now claimed by authorities, to be partly at least, resistant to the dread Anaheim disease. It is Lenoir. It must be understood, however, that the varieties which are desirable to graft on Lenoir are not immune from the Anaheim disease, and varieties grafted thereon are subject to the Anaheim disease.

It might be well for grape growers not to lose sight of the dangers of planting vines on their own roots. It has ruined more than one grape grower.

OLIVES AND FIGS

There has been a great interest taken in olives and figs in the upper country this season and much new acreage has been set out to these two fruits, both of which have done well in most sections. There hase been such an active demand for olives for pickling, which, with good crops and fair prices, has had the effect of turning attention to the olive, while the marked success of the Smyrna fig, since the introduction of the Blastophoga, has served to bring that fruit to the front. All through both the San Joaquin and Sacramento valleys there are very large areas of excellent land suited to these fruits, and the climate is perfect for them. It is not likely that either ill reach the orange, prune or raisin, in importance, but the olive and the fig, from present indications, will before many years take no mean rank among our fruit products, stepping up very close to the front.

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Practical Farm Science

BY PROF. A. J. COOK

BEE STINGS.

There is among those who have never handled bees a very needless or unnecessary fear and dread of stings. The pain when one is stung is so sharp and severe and the sting comes so quickly that anyone who has been once stung is likely to regard a bee as never safe unless dead or distant. Indeed this unnecessary fear undoubtedly prevents many from becoming beekeepers, who would otherwise be lured into this fascinating realm of work and study.

I have known people to whom the poison is so terribly virulent that I do not think they would be warranted in keeping bees or in having anything to do with them. Such persons stung even on foot or hand would not only suffer terribly and be prostrated for days but rash would result which was very irritating and the eyes would swell shut. I have known one case and heard of more, where a person especially susceptible to this bee poison died as the result of a sting. Such cases are however, very few and so exceptional that they are of no practical interest to but very few of us.

To most, then there need be no hesitation to keep bees because of the sting. Bees are rarely moved to sting if one handles them carefully and avoids all such actions as we soon learn will cause irritation. Although I was very nervous and afraid of bees when I commenced to work with them I very soon lost this fear and in a very short time was no more reluctant to go to my bees than to my horse or cow. After my first week or two, even the gloves disappeared and while I have usually protected my face by a bee veil, yet I have worked with the bees hours and days together, without even this protection. I feel sure our country would greatly profit by having more beekeepers. We are not only losing much honey when might be gathered but a much more serious loss is suffered from a lack of bees doing the necessary work of pollinating the flowers. If, then this dread can be removed so that more bees shall be kept, our country as a whole will be a great gainer.

The important caution to be observed in handling bees is to make no quick motions. Violent, nervous, thrusts madden the bees and they are not slow to resent such affronts. Bees are very easily and quickly subdued by the use of smoke. This greatly frightens them and when bees are frightened, they always commence at once to take their fill of honey. With bees as with people, a full stomach is coupled with amiability. To use smoke we need only to blow a little into the entrance opening of the hive. The bees are alarmed and fearing robbery, they at once commence sipping the honey and the work of subjugation is accomplished. As I remove the cover, I usually blow a little more smoke among the bees, as this drives them down into the hive and further intimidates and makes them more peaceable.

In lieu of a bee smoker, a roll of cloth tightly wound so as to not burn to rapidly, will answer for smoke. We simply hold one end and fire the other. The bee smoker is, however, by far the best for this purpose, and should be regarded as an absolute requisite in all beekeeping. As a good one costs but a dollar, expense is no bar to this possession. The bee smoker consists of a tin fire tube with a funnel shaped movable nozzle. The tube is fastened to a hand bellows. As we

"Cleanse and disinfect thoroughly through the burning fuel in the fire tube and so we can fairly deluge the bees with smoke if we desire to do so. Usually, however, but little smoke is needed. I have often burned cloth in the smoker but prefer wood, attacked with dry rot. This burns slowly and without producing great heat, gives ample smoke. It is always desirable to have the smoker burning while we are working with the bees. Then, in case they seem angry, we can immediately subdue their irritability. In case we must handle our bees when they are idle, at which time they are likely to be very irritable, it often becomes necessary to use the smoker very freely.

* * *

CALIFORNIA AS A BEE STATE.

Mr. L. L. Andrews of Corona, president of the California Bee Keepers' Association keeps his apiary in two separate localities. In one location he secured fifteen tons of honey last season and in the other ten. As he had only two hundred and fifty colonies of bees we can see that this was a good yield. The honey was secured from orange blossoms and sage bloom. Some of his best colonies filled ten frame extractor supers, three times in less than two weeks, during the height of the orange flow. This certainly shows not only that California is an excellent bee state but that with strong colonies a large amount of honey may be secured from the orange bloom. Mr. Andrews keeps his bees in the regions of large orchards until the sage begins to bloom in June, when he removes them to the regions where there is abundance of sage and buckwheat. When we note that Mr. Andrews secured over two hundred lbs. per colony from his large apiary in this year which was not one of the best, we need say little more to prove that California ranks first as a bee region.

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BEE TENT.

This is simply an enclosure made of wire gauze or cloth or both which we can place over the hive and in which we work as we are called to manipulate the bees. The cover is supported by a light frame. The one which I usually used is about six feet each way. This also seems to quiet the bees. In this enclosure they seem to lose all disposition to sting. This also serves to prevent robbing in case we must handle our bees when they are not gathering any honey. In times of working with bees that have foul brood, an oil cloth covering the whole space of the bee tent as a floor will greatly lessen the danger of spreading disease. I would not think of keeping bees without such a bee tent.

As I have frequently stated in these columns, Italian Carniolan bees are far more amiable than are black ones. For this reason, if for no other, I should always keep one of these races. They have other merit that make them desirable.

The Connecticut Commissioner f Domestic Animals examined 3603 cattle for tuberculosis last year, and condemned 587, allowing an average value of $12.54. The commissioner says it has been his aim to impress upon the owner the fact that the manger lately occupied by a tuberculous animal is almost sure to become contaminated and that a healthy animal would be likely to contract the disease if permitted to occupy the stall and eat from the manger before they had been thoroughly cleaned and disinfected. He adds "six good rules," viz:

"Admit as much sunlight as possible into the stable.

"Whitewash the walls, ceilings and stanchions at least once every year.

"Use common sense about turning cows out from a warm barn to stay in inclement weather.

"Make every cow in the herd occupy the same stall every time.

"Cleanse and disinfect thorourghly after removing a tuberculous animal.

"When you discover symptoms of tuberculosis, promptly call a veterinarian and have the animal examined."
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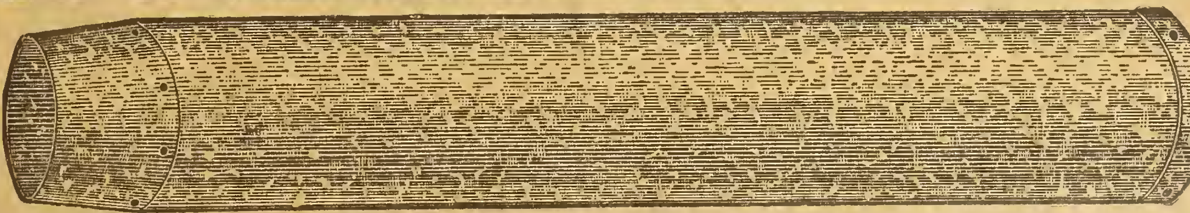

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California Horticulturally

BY JOHN ISAAC, SACRAMENTO, CAL.

SOMETHING ABOUT GINSENG

There are a great many people now inquiring about ginseng, and its culture, stimulated it would seem, by the florid advertisements of dealers who have seed and roots for sale, and who seem to be working the ginseng proposition as a sort of get-rich-quick scheme. Those who are figuring on going into ginseng growing should follow the advice of Punch to those about to marry, and "Don't." There may be one or two instances in which this plant has been successfully grown in garden form, but they are few and it is certain that, were it as easily cultivated and as profitable as the advertisers of seeds and plants assert, we should all be wild after it, for it would pay better than gold mining, and we could make easy fortunes at home and not have to face the dangers and uncertainties of the Klondike, or other forbidding wastes. To our California inquirers, at least, it is safe to say there is nothing in it, and they had better leave it alone. To be grown successfully it requires peculiar conditions of soil and climate, a deep, rich leaf mould, plenty of shade and moisture, but not swamp land. It is an exceedingly slow growing plant and no returns can be expected from it until the seventh year, and even then, under the best of care they will be light, while with a little neglect in the meantime, they may be nil. Ginseng is no new thing in America, but its value has been known for over a hundred and fifty years, and shipments have been made from here to China during all that time. Now, had there been such enormous profit in its culture, is it probable that it would have remained for our discovery at this late date? To all California inquirers our advice is: There's nothing in it; leave it alone.

* * *

.. A COSTLY INSECT PEST

A late issue of the American Cultivator, published at Boston, has a statement by Prof. Fernald, of the Gypsy Moth Commission, in which he advocates the appropriation of $200,000 annually to the work of fighting this one pest in the state of Massachusetts and claims that the work would be cheap at that figure in comparison with the losses incurred if it is left alone. A permanent tax of $200,000 a year to fight one pest seems pretty costly, and we cannot but regard our California method of not letting them get in, and of keeping down pests we already have by means of their natural enemies as much the cheapest and surest.

* * *

OLIVE AND COTTON-SEED OIL IN EUROPE

Consul General Skinner, of Marseilles, France, writes that there has been a heavy shortage in the olive crop in the Mediterranean region the past season, which is summarized as follows: France, half a crop; Spain, one third; Tunis, one-fourth; Northern Italy, one-eighth; Southern Italy, one third. There is, however, no danger that there will be any diminution of "pure olive oil" in the market, for the Consul-General, in the next paragraph, informs us that the imports of cotton-seed oil from the United States have increased enormously, being 175,695 barrels against an average of 75,000 barrels for the three previous years. About the only thing that can materially interfere with the olive oil output of the world will be the extension of the cotton-boll weevil and a serious shortage of the cotton crop.

* * *

GOOD CROP CONDITIONS CONTINUE

Reports from all parts of Northern California continue to predict an unusually good season. Rains have been abundant; almost up to the quantity of last season, and much more concentrated; the soil is filled with water, and there is no fear of its drying out before harvest, even should there be no more rain. Killing frosts have not occurred as yet, and danger from them grows less as the season advances. Many trees are in full bloom, while all fruit buds are well swollen. There is every promise at the present time that the fruit crop will be an unusually heavy one, and unless we get a timely freeze to help in the work, vigorous thinning will be necessary to secure marketable fruit. Grain is in good shape, and feed abundant. Altogether the season which opened so unpromisingly, is turning out one of the best on record.

* * *

A BACKWARD STEP

The Weather Bureau has stopped the issuance of its crop report and there is much ill feeling on this account among the more intelligent farmers, to whom they were some sort of a guide as to the prospects for the season. From these weekly reports growers were able to predicate whether crops in their line were going to be heavy or light, and whether prices were likely to be high or low. They served as a sort of business guide-post to them, and while necessarily somewhat vague, and not altogether accurate, were as good as could be, were gathered by a disinterested bureau, and were so far reliable. With them stopped, the agriculturist is left wholly at the mercy of interested parties for all his information, and this information will be garbled to suit the speculator, without a doubt. When the farmer is now informed by the middleman that there has been such an enormous crop of any article that he produces, that prices are low, he will have to take his word for it, and will likely sell his crop at a loss as he has no means to refute the statement. The movement looks very much like an effort to play into the hands of the speculator and once more offer the poor farmer on the altar of sacrifice. Secretary Wilson has always shown himself the friend of the farmer, but in stopping these crop reports we think he has made a serious mistake.

* * *

PREPARE TO FIGHT THE CODLING MOTH

Apple growers should have all their spraying outfits in readiness, a good supply of tested Paris green on hand, and be prepared to do vigorous battle with their greatest enemy, if they would gather any harvest. Nothing but the most vigorous warfare against this pest will prevent it from taking it all. Those who have established parasites in their orchards need not fear for them, as the parasite of the codling moth is a pupa parasite and does not interfere with the insect in its active stage; therefore it cannot be reached by any spray used againts the insect in its worm stage. Perfect cleanliness around the orchard and packing houses would do very much to check this pest, as it is in old fences, lumber piles, old boxes, cracks and crevices of outbuildings and similar places of refuge that it retires for pupation, and if it cannot find suitable resting places it does not thrive so well.

Dudley C. Moulton, who has been acting as County Entomologist of Santa Clara County for a year and a half past, and who has done some excellent work on pear thrips, has received an appointment under the United States Department of Agriculture as a field agent of the Bureau of Entomology.

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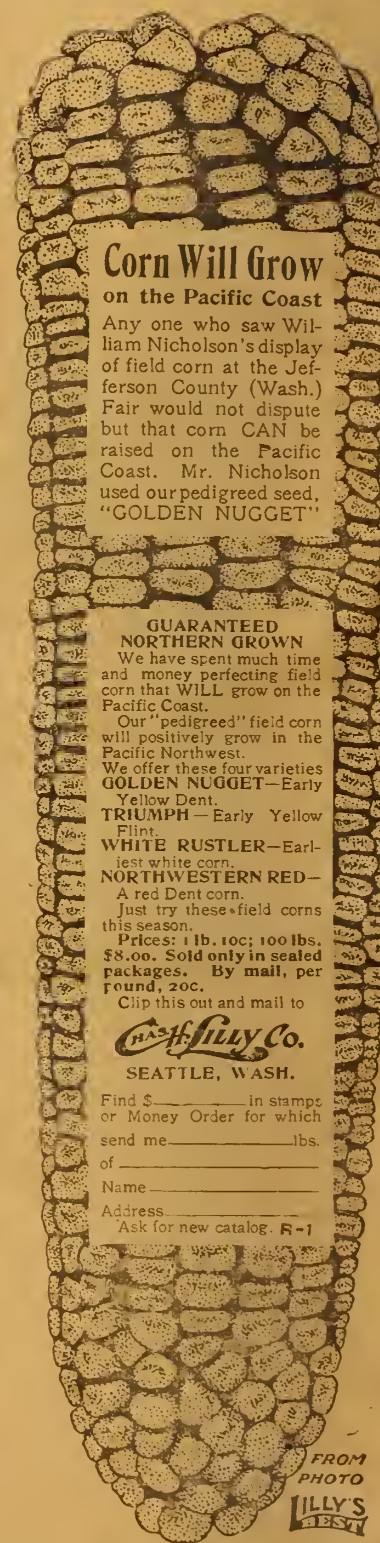
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With the Citrus Growers

BY J. W. MILLS

NEW VARIETIES OF ORANGES.

A few years ago there appeared an article on the subject of varieties of oranges that sized up the situation about right. It related how there had been a constant endeavor to secure an orange of merit that would prolong the season of the Washington Navel and also one that would come in ahead of it. It was not hoped that an orange of better quality than the Navel could be secured.

Mr. A. C. Thompson of Duarte, worked along these lines and claimed that he originated his Thompson's Improved by the manipulation of buds, uniting the qualities of St. Michael, Washington Navel and the Blood Orange.

Nobody doubts that Mr. Thompson worked conscientiously and hard on this problem but the writer of the article referred to, says that there is no evidence that Thompson's Improved is other than a natural variation of the regular Washington Navel. There is not the slightest resemblance to the St. Michael in the Thompson fruit, or tree. While the rind is smooth it has not the same quality. All of the fruits from which it is claimed this Improved variety came, ripen later than it does It is not an uncommon thing for all kinds of fruit trees to produce bud variations and the Washington Navel is noted for it. There is hardly an orchard of any size in which it is not possible to pick out trees that are totally different in character from the balance of orchards and the same may be said of its fruit. It has been our experience that occasional trees will produce nearly 90 per cent. fancy fruit while others will not produce any, and still they are all true Washington Navels. It would seem, therefore, that it is not improbable that while Mr. Thompson was searching for a superior Navel orange from which to create a superior strain, he simply continued to propagate its kind. Or it may have happened that he inadvertently took a bud that was one of those freaks that produce what are known as "sports" which in botany are known as bud variations. It is not a common thing to see the branch of a peach tree produce nectarines, but it happens once in a while, and after the tree has attained full size.

The merits of Thompson's Improved do not call for extensive planting as it is poor in eating qualities, being dry and full of "rag." It has been designated by some of our best growers as a "wooden orange" but still these qualities make it a good shipper if handled properly. The usual objection to it is the thinness of its skin. This is not a universal fault for it has not a thin skin in most places. It colors earlier than the regular navel and has brought good prices in the early markets. This variety should be planted in limited quantities in early sections for the holiday trade.

Navalencia was brought out by Mr. Thompson in the same way he did his Improved. It however, was not extensively planted and perhaps never will be. It has been our experience that none of these new varieties have the fine eating qualities of the true Washington Navel.

THE CENTRAL CITRUS BELT.

A few weeks ago the writer spent a day or two in driving through the orange groves of the central citrus belt in Tulare county, the active center of which seems to be about Porterville.

Nowhere in the State is there a section more full of promise to the orange industry or where natural conditions are more favorable to the production of citrus fruits at a minimum cost.

The chief facts in favor of this district, for they are facts, undisputed, are such as must appeal to all prospective purchasers of orange lands. Citrus fruits from this section ripen and are marketable so early that they do not come into competition with those from other sections of our State. Instead of having to ice their cars, as is the rule in most other parts, the shippers from the Porterville, Exeter, Lindsay districts send out their fruit from Nov. 1, to Dec 10, and consequently have to put a stove in each car to keep the temperature up. As a result this temperature is kept at a point so low that decay from the blue mold is an absolute impossibility, therefore losses from this source are practically none.

Both land and water are to be had in abundance at such low cost that visitors often wonder why the citrus industry there is still in its infancy. When one considers the extremely favorable natural advantages, he marvels that he cannot find orange trees from a quarter to a half century old.

To one who has traversed the fruit growing sections of our State it is a great source of pleasure to find a district entirely free from scale. In this respect this district compares favorably with any on the Pacific Coast. for nowhere could the writer find a trace of any scale on the citrus trees. The summers there are quite warm which largely accounts for the absence of scale, but such weather seems to be just what is required for the early ripening of oranges second to none.—E. B.

Horticultural inspector Day of Pasadena is reported to have stated that more than 1000 boxes of oranges have been taken this winter by tourists and sightseers. The loss to the growers, so far this season. is over $12,000.

The orange and lemon groves around. Hollywood are fast disappearing; as the result of the building movement in that district.

ORANGES AT IMPERIAL.

Editor Cultivator: Will you please tell me through your paper if you think it advisable to plant oranges in the Imperial Valley. The soil is good and water plentiful. The winters not very cold. Would you advise planting an almond orchard? An early reply is desired.—M. E. A., Imperial.

There is a possibility of big returns from oranges in the Imperial Valley, Try a few Thompson's Improved and a few Washington Navels. An acre of each will be sufficient.

Almonds are erratic things and are exacting in their requirements and we would advise you to plant not more than half a dozen trees of any variety.

The rains of the past ten days are said by fruit men to presage a great crop.

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They are made, from the best materials obtainable, months before they are shipped out, thus being thoroughly cured and blended.
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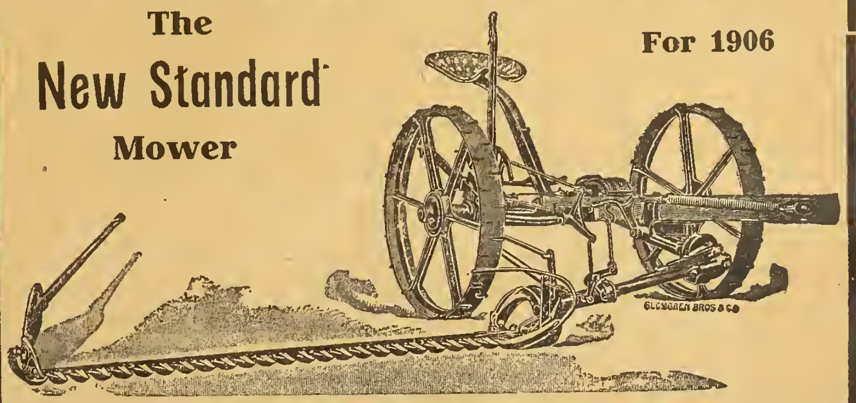

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The Ornamental Garden

BY ERNEST BRAUNTON, LOS ANGELES, CAL.

THE NILE LILY

The African Lily (Agapanthus umbellatus), often called the Lily of the Nile, is an old garden favorite, its large umbels of bright blue flowers often standing one to two feet above the mass of strap-shaped leaves. That all are not successful with this truly meritorious plant is largely due to lack of water during the growing and flowering season. At this period, the surrounding soil should never be allowed to dry out. In addition to the type we have a variety with white flowers and one with richly variegated foliage, though neither flowers so profusely as the common one. These plants have been in cultivation for centuries.

THE HYACINTHS

The hyacinth family consists of more than thirty species, mostly from the Cape, though the parents of our common garden-hyacinths are said to hail from the Mediterranean region. Owing to the dryness of our climate the growing of these beautiful flowers is not an unqualified success unless special treatment can be given. In case of pot-grown bulbs, it is an easy matter to keep them in the proper temperature and condition of atmosphere. To insure success a good root growth must be obtained before the flower spike starts. By keeping the bulb in the dark for some time this root growth can be first started. For that reason, plant six inches deep, the roots will then have a start before the spike reaches the light. Hyacinths have been cultivated in Holland since 1600 and our principal supply of bulbs is still obtained from that country.

STAR OF BETHLEHEM.

Several Ornithogalums are found at the Cape, though the best one (O. Arabicum) is from the Mediterranean and this is the one best known in California. South Africa has the second and third best in O. revolutum and O. thyrsoides. The Star of Bethlehem, so common in our gardens, is O. umbellatum, also from the Mediterranean region.

A STRIPED GRASS.

Chlorophytum elatum is a very valuable and common plant and seems to do well in almost any soil or locality. It is especially useful in hanging baskets, vases, and rockeries. The most common form in California is the variegated one, each leaf having alternate stripes of green and white. There is also a variety called picturatum, with a yellow band down the center of each leaf. This plant for many years has been sold in nurseries as Anthericum vittatum and under this name it is still catalogued.

RED-HOT POKER.

One of the oldest garden favorites and one of the most striking when in bloom is the "Red-Hot Poker" (Kniphofia aloides). All of the many varieties of this plant are worthy, but the public has been deceived so much that but few can now be induced to buy varieties advertised as new. The truth is that to the ordinary observer "all red-hot pokers look alike" This plant is sometimes sold under the name of Tritoma Uvaria, and many give it the popular name of "queen's lily," while some varieties are known as "torch lilies."

OUR DRACENAS.

Several very showy Dracenas are found in South Africa, and few of our plant fanciers would place them in the lily family, but it is the composition of the flower that determines the order to which they belong, and not horticultural distinctions. Dracenas differ but slightly from the Cordylines and the plants known as the lily palm so common in our gardens and usually called Dracenas, are really Cordylines and the two best known here are from New Zealand.

THE LILY FAMILY.

It is a strange fact that the Cape region abounds in bulbs of almost every kind, yet it contains no true lilies; that is, plants of the genus Lilium. Though the typical genus of the order Lilaceae is wanting, the family is most generously represented.

PERPETUAL BLOOMS.

A. J., Santa Ana.—Such a list as you wish would require a considerable study to prepare and we have no data on hand that would aid in the work. We believe you could "work out your own salvation" in such a scheme by observing what is in bloom at differnet seasons. This is all we could do for you.

RURAL IMPROVEMENT.

In addition to the college course, agriculture must be taught in the rural schools. Children must early learn to see what is about them. Education opens the eyes of the blind and unstops the ears of the deaf. Teachers, it is your opportunity to work these miracles by pointing out beauty in the common things—the tree, the sky, the rock, the brook, the hillside and the meadow. If the child is taught early to love the things about him, it will be a joy to turn his hand toward their development. Then manual labor would not be a drudgery. One should experience as much pleasure in planning and caring for a garden is in the creation of a work of art.

Farmers, we are in reality educating our children for everything save that which they must actually do when they step out into the arena of life. You want John to stay on the farm; you want Mary to know how to carry on a well ordered home. They are sent to a country school, then to college. They receive their education. John understands astronomy and psychology fairly well: Mary has a smattering of French, and can play a Liszt rhapsody; but alakaday! John cannot stock a plow nor plant a garden; Mary cannot cook a meal nor clean a house.

Educators are seeing the folly of all this, with the result that manual training, nature study, domestic science gardening and agriculture have been introduced into city schools.

We need these studies taught in the rural districts, and farmers must get their heads together, vote a local tax and see to it that their children receive the right kind of education. "Just as the twig is bent, the tree inclines" The direction given the mind of a child determines his future usefulness as a citizen of this great commonwealth. In a democracy the stability of which depends upon the individuals who carry it forward it is absolutely essential that each unit should be sound and strong. The unprecedented development of the United States is due more to its free public schools than to any other agency. It is the right of every child to have an education. Ignorance is the cure for nothing.

If we would improve the external aspect of our rural communities, it must come as the result of education. A more intelligent understanding of the soil, of the care of live stock, will quickly manifest itself in improved external conditions. Indeed, this is the only way to secure rural improvement.

When you get it it grows—Lilly Japanese Honeysuckle root. See advertisement on page 273.

ROSES
ROSES

All the best garden sorts, in fine vigorous plants, at proper prices.

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We do Landscaping in all its branches, but also carry a full line of Ornamentals and Fruit Trees. Several different varieties of Acacias and Eucalypti. Send for our prices.

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LILLY'S BEST A large surprise packet, value 50 cents, containing seeds of over twenty different annual flowers—the kind your grandmother used to grow. Sown broadcast, will give you a bed of flowers in constant bloom. In place of other premiums, empty envelope is good for 25 cents in any order for $1.00 worth of seeds.

10c Mail us this ad and 10 cents and we will send you this 50 cent packet postpaid.

New Seed and Plant Catalogue Free.

Chas. H. Lilly Co. Seattle, Wash.

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and other plants. Send for our illustrated catalogue.

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In the Vegetable Garden

BY ERNEST BRAUNTON

TOMATOES IN CALIFORNIA.

Tomatoes are grown largely in the State for canning, and for this purpose are usually planted to mature in late summer and fall, coming to the cannery after the fruit season is over and finishing the year's run. This may be called the main crop, and is grown largely in Alameda and Santa Clara counties, in the San Joaquin and lower Sacramento valleys, and in Southern California.

Very recently there has developed in certain practically frostless sections of Southern California, a profitable shipping trade in fall and winter tomatoes, the vines commencing to bear after the beginning of cold weather in the East, and continuing well into the winter without protection. In the usually dry, warm weather previous to December 1st a large amount of fruit, maturing abundantly in October, November and December or later, may be shipped East when the market is practically bare, and command a ready and profitable sale. This fruit is picked in a hard-ripe condition, carefully selected, wrapped in paper, and shipped in four box crates like plums or peaches. During the past fall nearly 500 acres of these winter tomatoes were in the La Habra district near Whittier mostly in young walnut orchards, and more in other sections about Los Angeles. With the canners paying about $8 per ton for the summer crop, the rates of $30 to $50 realized from winter tomatoes look very attractive and make the business profitable to the grower. The production is large and of good quality. Altogether the growing of winter tomatoes in suitable localities may be called a promising industry, capable of considerable further development.

In early spring tomatoes are planted by vegetable growers in many parts of the State, and these supply the local markets in the earlier part of the season. This business usually brings good returns, though the production is not so large as in the later crops.

GARDEN DRAINAGE.

When the size and place for the garden have been determined, attention should be given to the drainage, unless it is naturally very good indeed. The purpose is to get rid of an excess of water, which left alone, cuts off the supply of air from the roots of the vegetables and stops their growth The work must be done thoroughly before planting; afterwards no remedy can be found for a failure.

Surface drainage is frequently secured by use of beds raised above the level of the ground. While this plan has disadvantages, it is commended where no other seems practicable.

But really effective drainage must be underground, and tile drains are usually most economical. Where tile cannot be had, stones or brush may be placed in the bottom of the ditch. For most soils the ditches should be 3 to 4 feet deep and about 30 feet apart. They should have plenty of fall and be carefully leveled at the bottom. When the ditch is ready to fill, sods, straw, or paper should be put over the tile or stones to keep out the loose earth. A ditch can be dug in most soils with a spade alone if the digging is done so as to leave one edge of the spade free. This method of digging of course gives an advantage also in spading a hard soil for beds or other use.

Trenching will often take the place of drains. This consists of breaking up the soil two spades deep instead of one. From the top a spadeful of earth is thrown out and turned over. It is only lifted up a little and allowed to drop back into its place. This must be done, however, in a way to break up the earth thoroughly. Trenching needs to be done only every two or three years. It is especially useful when the subsoil is very hard or comes near the surface. Thorough subsoil plowing renders trenching unnecessary.

KILLING WEEDS.

Weeds will be most plentiful in the vegetable garden, when the rain is plentiful. The plow and hoe ought to be depended upon mainly. Hand weeding is necessary in some cases, but is always slow and tiresome. Various forms of cultivators and wheel hoes are in use and have many advantages over the ordinary field implements. Also, there are several forms of hand hoes made to cut just below the surface and kill the weeds more effectually and rapidly than the ordinary hoes will do.

Several kinds of grasses are the hardest to deal with when once they get set in the ground. The worst of these are witch grass and Johnson grass. Sometimes very troublesome are crab grass and Bermuda grass. The thing to do with these is to see that they are well killed out before the garden is planted and not to allow them a start afterwards.

TURNIPS.

For turnips, a rich finely pulverized soil is needed. A sandy or gravelly loam is preferred. The seed may be sown quite early, as the plants are not easily hurt by frost. Sow in drills 1 foot apart and half an inch deep, or sow broadcast and rake in lightly. If there should be no rain a thorough sprinkling will insure germination. The plants should stand at least 3 inches apart. Repeated sowings are necessary for a satisfactory succession in summer . White varieties are preferred for summer use.

GROWING SQUASH.

A warm, light, rich soil, deeply worked, is best. Plenty of stable manure will be repaid by increased yield. Plant summer varieties in elevated hills, 4 feet apart each way, as soon as the ground is warm. Place the seed upright, with the eye down, and cover 1 to 3 inches deep. Late varieties should be planted in hills 6 to 8 feet each way, leaving four plants to a hill. Another way is to plant in rows 12 to 20 feet apart and thin to 6 feet between the hills in the row. Early beans or peas may be cultivated between the rows, to be cleared away in July. Weeds must be kept down and moisture held by cultivation. The hand hoe must be used after the vines begin to run.

GROUND CHERRY.

This plant, also known as strawberry or winter cherry, grows wild in the fields of California. Its fruit is used for preserves for the table. A good soil well worked improves the quantity and quality of its production. It may be planted early in drills 3 feet apart, with 12 to 18 inches between the plants in the drill.

It is very productive and keeps a long time in the husk.

PLANT GUARANTEE.

The request to replace dead stock is one of the most annoying features of the nursery business. This request nearly always is made by those unacquainted with plant life. They purchase trees and plants without any thought of a possibility that some of them may die, and in their disappointment they reproach the nurseryman with the idea in their minds that their loss is wholly through some remissness of his. The intelligent buyer knows there is some risk of loss, and he understands he assumes that risk.

There is no reason why a nurseryman may not insure a lot of stock if he so desires, just as an insurance company would do. But the rule of the trade does not call for any insurance, being in this way on a par with all other lines of business.

The care taken to give good trees and plants and the expense of doing it as well as the expense of informing customers how to treat their trees in order to have success, costs the nurseryman as much as it would do to replace dead ones in very many cases. Look at the reading matter many catalogues contain bearing on this very subject of proper treatment of purchased trees; and in addition to this, some establishments issue little booklets gotten up expressly to convey such information to intending purchasers.

ACETYLENE LIME IN GARDENS

"I have used acetylene lime now for four years, but attach more importance to it for its value for killing and driving away the various insects such as slugs, grubs, etc., which frequently abound in some parts of the garden where it is especially shady or the aspect is north. I find it has no detrimental effect when applied to growing plants, and have tried it on cabbages, turnips, globe artichokes, and various other things, and have used it freely this season on canterbury bells which were badly infected with the leather jacket grub.

"However, I much prefer using it on vacant ground in the Autumn or early Winter and I have had very satisfactory results. The lime keeps the soil free from insects for at least two or three seasons, and, where applied three years ago, it is still freely seen in the soil. It should not be used too much on fast growing vegetables for kitchen use in case of unpleasant flavor. I find crops invariably do excellently after its previous application to the soil.

"Our refuse is drained into a large tank, together with the water which is used in cleansing the generators—the latter making it of a more moderate strength. If we wish to use it as a liquid it will easily mix by being stirred up, and is then about the thickness of lime-wash, which it much resembles. The liquid, however, can be taken off, and the lime used separately.

"If the generators remain for a few hours after the gas is made, the liquid, which is very strong and perfectly clear, can be taken off and used without any lime appearing on the soil. It seems equally harmless, too, in a crude state, even to very small seedling plants.—The Garden.

Lilly plant roots are not sticks but roots. They are fibrous and they grow. See advertisement of Japanese Honeysuckle, page 273.

Cuthbert Raspberry Plants
$1 per 100, $6 per 1000
Gray's Gardena Dewberry
$1.25 per 100, $8 per 1000
A. E. Nelson, El Monte, Cal.

Seedless Blackberry

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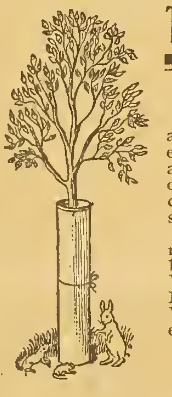
J. C. Ostergard, Burbank, Cal.



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You know we could not do business on such liberal terms if our seeds were not as represented. They are guaranteed true to name and the seed grown. Remember, we require no money in advance. Order today, using coupon below, and you will say it was one of the most profitable dollars you ever spent.

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Box 27, Glendale, Cal.

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[Write plainly.]

Name...
Address...
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Strawberry Guavas 3 years old. 2 to 3 feet, high, very straight. Balled and sacked and in most excellent condition. Price packed F. O. B. $20 per 100
TIM CARROLL, Anaheim, California.

Wagners Citrus Tree Nursery The Ever Reliable

Strong, high-grade, well-grown stock of Valencia, Washington Navel, Imported Navel and other standard varieties of citrus trees. Also deciduous trees, grape vines, etc. Prices Reasonable.

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Wagner's Nursery Phones: Home, 1291; Sunset, 1297 Pasadena, Cal.

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Friday, March 30, 1906

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Looking for Educated Men.—Some time since, the Iowa Homestead published the statement that the University of Wisconsin each year receives scores of letters asking it to recommend suitable persons for such positions as editors of agricultural papers, assistants in the U. S. Department of Agriculture, professors, instructors and investigators in agricultural colleges and experiment stations, teachers of agriculture for secondary schools, colleges, and universities not distinctly agricultural, managers of stock and fruit farms, and country estates, experts in butter and cheese making for creameries and cheese factories, experts for city boards of health and dairy and food commissioners, and similar positions requiring accurate knowledge of the principles of agriculture and dairying. The demand for these men far exceeds the supply.

Commenting further along this line the Homestead says: "It is evident that the young man possessing energy and push, who really loves rural life, and will devote himself earnestly and conscientiously to the cause, can enter any department of agricultural effort with the feeling that he can attain as great success therein as in any other line, for no department of educational effort is today opening up more broadly and more rapidly than agriculture."

In accordance with the tendency of the times, which is one of specialization demanding that its successful men shall have thoroughly mastered some one thing, and be able to do that one thing as well as it can be done, advanced agriculture is dropping more and more into specialties. Instead of producing a little of many things, the successful farmer is now learning to grow a few products of great excellence. Many are demonstrating the fact that there is a profitable business in raising only one or two products, such, for example, as lettuce, carnations, berries, pure bred live stock, poultry, or pure bred seed grains. In order to do this most successfully, however, scientific knowledge as well as practical experience is demanded; a man must understand the basis of his work, as well as the best and most improved methods that are being developed in agricultural colleges and experiment stations.

What is true of the demand for trained men in agriculture from the University of Wisconsin, is true of the University of this State as well. The tendency is to go to the agricultural colleges, for help along higher farm training.

As a result of this tendency to make agriculture more scientific, there is an increasing demand for young men who have had a thorough training in this field. The value of accurate knowledge and special training in agriculture is being appreciated as never before. Capable, well equipped young men, whether with or without capital, are everywhere in demand in agricultural pursuits. As long as agriculture continues to be the greatest single vocation in the United States, with an annual output valued at over five billion dollars, there is an ample field for young men thoroughly trained. Many are needed, after their college course in agriculture, to go back to their own farms and operate them skillfully, with profit to themselves and the community about.

For the well trained young man, without capital, who must serve others for compensation for a time at least, there are ample opportunities in agricultural lines.

* * *

Storm Damages.—Reports from all sections of California indicate damage from recent storms. The fall of rain has been so continuous and so heavy as to tax to their utmost limit the natural and artificial conduits for water disposition. In some localities vast sections have been over flowed and consequent injury to ranchers has resulted. In many towns, water has worked desolation, destroying walks, drives, streets and parks. These towns, however, have no storm drain system, nor any means provided to discharge the excess water from the hills and highlands. This is where a great many California cities are deficient and it is where they should begin to make radical improvement. In towns skirting foot hills or mountains, the danger from wash and storm waters proves often most serious.

Drains and water ways are needed to control the torrents which sweep down the hills, and if these were provided thousands of dollars would annually be saved to individuals as well as towns.

The care of storm water is a most difficult proposition to solve, because so many questions of property rights arise, and the law is so complex in its applications, but for all that it must be solved and one of the first matters of importance for cities and rural towns to master is how to control the accumulation of water to the safety of property.

It has been suggested by government engineers that a dense growth of shrubbery planted on the hills and mountain sides would serve to retard the flow of water, while others recommended that this excess moisture should be conserved by means of conduits and ditches, into great cisterns for use in irrigation during the dry season.

It has been estimated that the foothills furnish enough excess moisture to irrigate thousands of acres of land and that a system of great reservoirs distributed along the foot of the mountains would furnish nearly all the irrigating water needed without the bringing of the Owens river into Southern California. The one system would cost about three millions of dollars; the other something like twenty-five millions.

* * *

Government Control of Railroads.—One of the latest converts to "socialism" is Andrew Carnegie. He has been advocating several measures in recent years, which smack of socialistic tendencies. Strictly speaking they are not in the propaganda of the conservative element of socialists, but they nevertheless lean to the co-operative idea.

In a recent letter to the Washington Post, Mr. Carnegie, expresses his views upon the pending rate bill and comes out squarely for government control of the national railways. He writes as follows:

"The trouble with the appeals to the courts is in the fact that railroad companies have their permanent legal staff. It matters little if appeals be frequently handed over, it will always retard and sometimes may defeat justice.

The great shippers who could afford to fight the appeals are those who benefit by secret rates or rebates. They are quiet, and wish no change. The small shippers must suffer, especially if appeals can always be taken. They can spare neither the time nor the money it would require to obtain justice.

The best remedy, as it appears to me, is to allow appeals only when a proposed change of rates effects the railroads to not less than $1 per annum. The amount should be what may be considered high by uninformed parties, but it is a trifling change which does not entail the loss to a rail oad company of a hundred or even two hundred thousand dollars per year. The commission should be trusted to decide trifling cases fairly, the railroad companies should be entitled to the judgment of the courts when their revenues are seriously impaired.

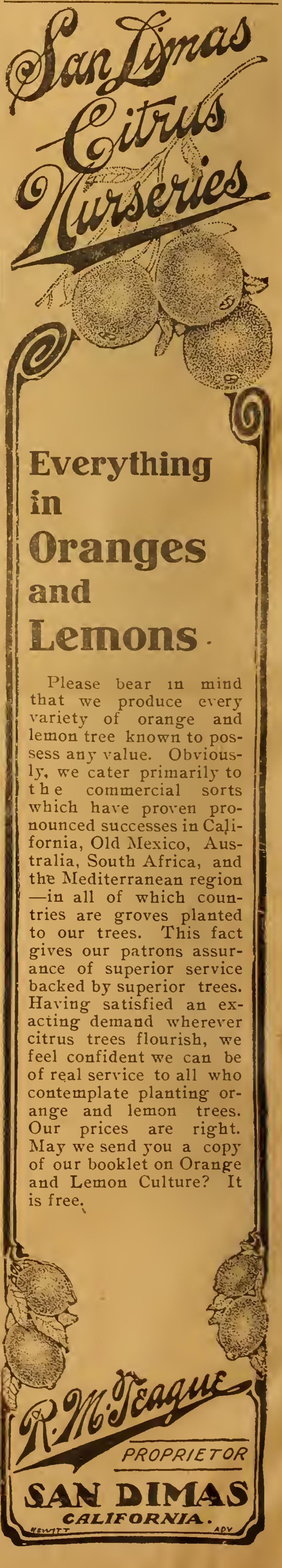
Government control of railroad rates I consider imperatively required. Other nations have found it so. So shall we."

* * *

Prof. Waite Gone.—Prof. M. B. Waite, who has had a large corps of expert assistants working on the pear blight in Central California, has finished his labors for the present season and returned to Washington.

On his return trip he made a pleasant call at the Cultivator office and expressed himself as well pleased with the results of this "campaign of education" as he terms it. It is believed that proper measures for the eradication of the pear blight have been taken in 90 per cent of the orchards and the Professor says that the near future will mark its almost total extinction.. tion.

California congressmen who have any regard for their political heads will give careful heed to the fruit growers' demands. Temporizing will not be tolerated.—Santa Ana Bulletin.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R. M. Teague
PROPRIETOR
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CALIFORNIA.

NEWS OF COUNTRY LIFE IN THE GOLDEN WEST

HORTICULTURE.

Plans are matured for a large grape juice factory at Rochester.

The icing of orange shipments, en route for the Eastern markets has been commenced by the railroads.

F. K. Adams has received a choice bronze medal from St. Louis for a prize won by his plate pyramid exhibit of oranges sent to the Louisiana Purchase Exposition.

Monrovia and Duarte will receive large returns from oranges, the returns this season being twice as great as those last year. The Fruit Exchange declares a dividend of $15,000.

The "Big Four" ranch of North Rialto has been sold to three Colton men The reported consideration is $60,000. The property contains 213 acres, of which 160 acres is in citrus fruits.

Although there is report that some of the peaches have blighted, inquiry and examination of several orchards reveals the fact that there is a fair average of peaches set.—Hanford Sentinel.

The East Highland Orange Growers' Association is putting out three and four cars of oranges a day this week. The output of this house will be about 400 cars this season.—Messenger.

Butte county citrus growers will set out several thousand acres in oranges this spring. The people believe they can market this fruit annually from three to four weeks in advance of Southern California growers. The experiment will be watched with interest.

President W. H. Young of the Duarte-Monrovia Fruit Exchange has made reply to a criticism of C. N. Whitaker of Monrovia against the management of that organization. Young shows that the directors of the local body of the central exchange get $150 per year.

The Pomona Fruit Growers' Exchange sent a carload of oranges and decorations to the exposition. In the car were twenty-five different exhibits from individuals living in this valley. Of the number, many received prizes and Mr. Adams was among the number.—Pomona Progress.

The raisin growers of Tulare county will hold a meeting on the afternoon of March 31 for the purpose of accepting a plan devised by the executive committee of the company for a sweatbox pool of the raisin crop for the years 1906, 1907, and 1908, the hope being that a price of 3 1-2 cents may be realized clear through.

AGRICULTURE.

The cabbage crop of the Fullerton district will run 300 cars.

The first car of Green Top Celery was shipped from Smeltzer by the Golden West Company.—Huntington Beach News.

Shipments of celery from Huntington Beach for the week were seventy-two cars, which bring the season's total up to 2167.

The Thermal Cantaloupe Growers' Association has decided to make no contracts for the melons of the coming season. They will market their own production.

The Tulare Sugar Beet Company has three big plows, 32 head of stock, two seeders and several harrows all at work putting in the crop of beets on its land in the Browning tract near Tipton.—Register.

The United States Department of Agriculture will again co-operate with Sacramento Valley farmers this year in the experiments of Indian corn culture, and will also undertake co-operative experiments in forage varieties of sorghums.

The Carnegie Institute has decided to send a skilled botanist to Santa Rosa, California, to keep a careful watch of Luther Burbank's work and protect him as far as possible against further publication of absurd stories of his achievements, and to give out authorized statements whenever he has anything of public interest to announce.

One car of Pink Plume celery was shipped last Monday from the Orange county fields. J. C. Thomas raised this celery, which is a new variety. It is very crisp and tender and has a fine taste. It is hard to determine whether this celery is profitable, as it was planted very late, but a fair crop was harvested. This week will see the end of the shipment of Golden heart celery for this season.

LIVE STOCK.

Chino is to have a modern creamery.

Since its inauguration the Watsonville creamery has been a thriving and paying enterprise, says the Pajaronian.

A hog raiser near Stockton, fed 100 pigs on swill from the hotels and one third of the number died from hog cholera.

Articles of incorporation of the California-Mexico Cattle Company were filed at San Diego last week. The capital stock is $2,000,000.

Sufficient rain has fallen in California to insure a very large hay crop and stock will be abundantly supplied with grass late in the season.

A farmer in Yolo county sold a hog last week that weighed 332 lbs. at nine months and yet there are those who say California isn't a good hog country.

Serious trouble is brewing between the sheepmen of Oregon and Washington over a decision of forest reserve land located in Oregon, part of which has been set off to Washington.

The report of Secretary Trafton showed that, during the year ending March 1, 1906, the Watsonville creamery manufactured 206,824 pounds of butter. The amount paid out for cream was $44,987,85.

The Humane Society of Pasadena after depriving a dairyman named Bell of four horses which were so badly used up that it became necessary to shoot two of them, made arrangements to provide the man with other horses with which he can peddle his milk.

MISCELLANEOUS.

A new hotel and sanitarium is to be built in Elsinore.

The carnation fields at Oceanside are to be extended from five to twenty acres.

The Ocean Park City Trustees have let a contract for a $10,000 garbage incinerator.

The people of Tulare are beginning to take an interest in the proposition for a big May festival.

The street railroads of San Francisco, have agreed to lay their wires under ground, through part of the city.

A new train schedule has been arranged for Elsinore, which provides more acceptable service than the old arrangement.

After the city election at Riverside the citizens of that town will be asked to hold a mass meeting and frame a new city charter.

The present prospects for crops in Tulare county indicate that more of the farmers will be buying automobiles next fall.—Register.

Ground was broken last week for the erection of three new schoolhouses in the Santa Monica school district. They are to cost $75,000.

At Corona a new company has been formed, to incorporate with a capital stock of $25,000, for the purpose of manufacturing solar heaters and apiary supplies.

Business men and farmers from Colusa and Glenn counties are arranging a big excursion into San Joaquin Valley to ascertain the value of ditch irrigation.

The Board of Trade at Corona has received communications from a number of prominent United States Senators, announcing their support of the Hepburn rate bill.

The first machinery for a silk factory at San Diego has arrived. There are about 20,000 silk worms in the vicinity of the bay and more eggs are expected soon.—Escondido Times.

It is reported that the Fresno and Merced people who have suffered from high water intend to attach the money paid Rainmaker Hatfield, on the ground that he is responsible for their woes.

The Santa Clara County Promotion Committee is the name of a new organization, the object of which is to promote and advancement of all the Santa Clara Valley sections and towns.

The city of Sacramento owns its own water works. It costs the city $24,509 a year to run them; the city receives $125,000 income from them, leaving a profit of $100,000 in round numbers.

Secretary Bonaparte strongly recommended an increased appropriation for the Mare Island navy yard, to provide for the necessary equipment to build the collier Prometheus and other government boats.

The first conviction under the new child labor law was made in Los Angeles last week where a father was fined for keeping his 12 year old boy out of school to work in his shop. Let this law be enforced.

The oil district just north of the city of Bakersfield, Cal., known as the "Kern oil fields," has recently been surveyed by the United States Geological Survey, and as a result the Bakersfield Special map has now been engraved and printed.

Dr. Martin, formerly an inmate of the Mendocino State Hospital, has commenced suit against the county of San Francisco examining physicians; and the managers of the State hospital and demands as compensation for his illegal detention $9500.

The supervisors of San Diego have voted to spend $2000 this year on the coast road from San Diego north, and they are urging Orange county to appropriate an equal amount to be spent on the portion of the road within the limits of that county.

Pasadena property owner have been instructed by the city officials to tear out all culverts which interfere with the flow of storm waters in the gutters. Several thousand dollars worth of culverts are now being destroyed, and a new system of overbridging will be installed.

In obedience to orders received from the Department of Commerce and Labor, the local Federal steamship inspectors of the life-saving apparatus with which the ferry boats in San Francisco Bay are equipped, have installed new and improved life savers on all boats carrying passengers.

Bulletin No. 173 of the College of Agriculture, of the University of California, is most valuable. It is the report on Fertilizers for the year 1906. It gives the results of the analyses made of different fertilizers and their real price cost. This bulletin is free to all California farmers who write to Director Experiment Station, University of California, Berkeley, California.

LINER ADVERTISING

Advertisements in Liner Column will be charged 1¼ cents per word. No advertisement taken for less than 25 cents. Eight words to a line.

LINERS

MAMMOUTH PEKIN DUCK EGGS, FINE Strain, 13 for 75c. Miss Wood, 130 Carey St., near Arroyo Drive, Pasadena, Cal.

FOR SALE—14 STANDS OF BEES IN Standard hives, Hoffman frames, in good condition, by Peter Veilex, La Canyada, Cal.

ANCONA EGGS (FROM PERPETUAL EGG Machines), imported and domestic matings, $2, $3.50 and $5.00. L. L. Viereck, Pres. Ancona Club, Albany, Oregon.

BLUE ANDALUSIAN EGGS FOR HATCHING, from three noted strains, $2.50 and $3. Incubator lots $7.50 to $15.00 per 100. Mrs. T. R. Griffith, 3111 Walton avenue, Los Angeles.

WANTED—SITUATION BY MARRIED man who understands culture of deciduous and citrus fruits. Good horseman, pruner and irrigator. Address "Orchardist." Care of Cultivator.

FOR SALE—WHITE MINORCAS EGGS $1.50 sitting from one of the nicest pens of Wh. Minorcas in Southern California. Lay the most eggs and the largest-whitest eggs of any breed. Call and see them at 547 W 54 St., or address 1004 E. 9th St. Also incubator chicks for sale.

DAIRYMAN, HERE IS YOUR CHANCE, 2 excellent first-class milk cows; price reasonable; must vacate place, hence must sell. 618 Stevens Place near Grand Ave and Sunset Boulevard.

WANTED-PRACTICAL EXPERIENCED farmer with a number of teams and complete outfit to take an interest in and care for 640 acres of very rich level land with plenty of water-very little cash required. House and barn and money for development furnished. R. V. Milner, 118 Court St., Los Angeles.

Edison Phonographs and Records at factory prices, delivered free anywhere on receipt of full retail price; largest stock of Edison records west of Rockies; send for circulars. Peter Bacigalupi, 786 Mission St. San Francisco

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First National Bank, Los Angeles, Cal.

Live Stock and the Dairy

BY MRS. MINNA E. SHERMAN, FRESNO, CAL.

AGAIN "MORE COW."

Now, I prefer every cow should go dry at least six weeks, but as I told you last week, I have not succeeded in this practice. I believe that I may read all the literature available on a subject, and yet, if I write from that I am failing, if I do not know that which I am writing to be true. That which is forced on us by experience. must stand. even if the facts do not fall in line with theories advanced from the study. It is well to say facts ought to do so. But if they do not, what are you going to do about it?

The best you can do is to try to solve difficulty without inflicting pain on the poor innocent cow. When you have solved, or failed to solve in something of this kind, it is well to tell others. so that they may follow your example or may steer clear of the experiment.

* * *

I do not, however. believe it right to use milk for human food close to calving time, however good it may seem to be, if it is good I have it given to the pigs, if not good, it goes into the manure pit with the liquids from the barns, and is hauled from there to the fields.

While I prefer that the cows should have a vacation of eight weeks, still I have her milked, rather than force her dry by limiting feed and producing a loss of condition. The cow really looses more than by feeding and milking and there is no caked udder or teat troubles to contend with. or the loss of butter fat while the cow is coming again to her normal condition. I admit it requires extra good cows to give these troubles, yet it is among the tops that the record breakers come out.

* * *

In judging of cows as to constitution, in the heifer, the very swayed back one as a rule are weaker than the straighter spine animals, in an old cow the back is naturally more swayed than in the young animal. The rigid back bone has a little greater elevation at the rump than at the shoulder. The hips and general back view may be coarser than in a cow. For the heifers that is too fine, as a heifer is often as weak as a cow. You know the Greeks understood this thoroughly in the human form divine, they chose for the models of Venus, boys of fifteen,,knowing that a godess should represent bodily vigor and force, and to that age form in the sex did not differ greatly, so it should be in the dairy. the form of a yearling, be it of either sex, should not be widely divergent. From this time on the heifer should grow more feminine, or cowy, and the male to his form or as a context would simply be more "bully."

Stamina is the hardest to build up at the same time milk production is increased. The will power of dairy cattle of good breeding is more like that of all well bred horses. they are responsive, while the common cows are ready to give up and die without trying to live. When they are sick they are like a mule that is bogged down. they will not do anything for themselves. One often feels that if they would only take a little interest they could get well.

I do not believe that a cow or horse ever forgets kindness. I had a neighbor call me over to his barn to see his cow ill with milk fever. We rigged up the Smitz air treatment and cured her. She was wild and half delirious when we began. I patted and talked to her coaxingly while we worked. The next morning she was up eating and was glad to see me, and though that was two years ago, she is always glad to see me. With the women of the family she is wild and threatens them with her horns when they come near. So well does she know me that she always follows me the length of her tether and shows pleasure when I pat her.

* * *

The Barnyard.—These faithful cows that work for us should not be required to stand in mud in the barnyard during the winter time. It is hard to keep the barn free from standing water, almost impossible at times, yet still we do not do nearly as well as we might with a little care.

The water from the eaves of the buildings is permitted to fall and make puddles around the buildings, this water should be piped away from the eaves in gutters to a place outside of the barnyard where it can run away into the field. The daily gathering up of the cow's droppings has a tendency to lower the barnyard. Now if we began by using a scraper to haul in earth, by taking this away from a broad drain made along the outside of the fence, two purposes will be served, a drain that will take the rain water that falls, out of the yard and to build up the barnyard so that it will shed the surplus water.

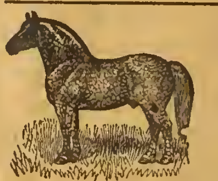
The yard should have a fresh surface all over it each spring. This is best hauled in rather than to plow up, for the surface is compact with the tramping and is a good foundation for the fresh earth. Where a baranca is near that is full of stones, a drain can be made by burying the round stones in a trench five feet deep and a couple of feet wide, using care not to get dirt in between the stones. I have seen wide drives made on top of these stone drains by using small stones and then crushed stone on top of that, making macadam, this drive was covered by cows, lying down close together, evidently they enjoyed its dryness. This drain or drive sloped away from the barn and only in the heaviest downfall did the water stand in the barnyard, and in a few hours it had found its way out to the drain.

In the San Joaquin valley we have stone and fortunately little rainfall. Sometimes a brush drain will act for a year or so. This is made with poplar poles, six or eight laid lengthways in a pile, in the trench, and then grapevine brush filled in, to within six inches of the top. This top is filled with the coarsest sand obtainable, usually from some neighboring ditch bank. In the upper part of the valley the water finds it easier to take to the sand than to penetrate the adobe. In our part of the country where the soil is readily absorbent, this form of drain has proven of little use. Just now the yards are distressingly muddy. If I were where the cobble stones could be obtained I should have the yard paved with them and then asphaltum put over them. Oiling the yard has been suggested but that should it become muddy would be terrible, for it could never be cleaned off the cows' udders in any reasonable time.

The stalls also need to be kept clean and well filled with dry earth. I am sure that plenty of dry sand on top of the pounded clay with a smaller amount of hay to make a better bed than so much hay, the sand is not hard like the unyielding clay and with enough bedding for comfort is better than too much, for it is usually foxtail hay purchased cheap that we use for bedding. Speaking of fox-tail reminds me of a little thing than happened last fall. It was in the middle of the fruit season and every room in the bunk house was filled, as well as all the tents. Two young fellows came in with the fruit packers that were supposed to room in town. One night they concluded that they would not go back to town and asked if they could sleep in the calf barn. Consent was given; in the morning they told the foreman it was all right, except that the cocktails bothered them. Some of the men thought a cocktail or two would not bother them and they guyed the fellows until they quit the job.

* * *

Editor Cultivator: I had a nice Jersey cow, five years old. When her calf was not more than twenty-four hours old she took sick. Her hind legs seemed stiff and her back weak, so she could hardly step. In six hours time



The San Fernando Valley Horse Breeders Association will stand the Imported Prize Winning Clydesdale Stallion **Barometer** for the season of 1906, commencing March 15th. At Toluca, stables of A. McCormick, Thursday, Friday, Saturday and Monday. At Burbank, at Tom Stony's barn, Tuesday and Wednesday. Service for the season, $17.50. Insurance under special agreement. Best care given stock, but accidents and escapes are at owner's risk.

Barometer was shown at Glascow, Scotland, with his sire, who took first premium, and Barometer second. Barometer took first prize at the Ohio State Fair, 1905: first prize at American Royal Fine Stock Show, Kansas City, Mo., 1905. He is mahogany bay, weighs 1900 pounds, five years old, fine action and carriage, and a perfect horse in every respect.

Pedigree **Barometer** (11254) 11802, mahogany bay, foaled June 20th, 1900, bred by James Fleming, Friock Mains, Friockheim, Forfarshire, Scotland; sired by Benedict, 10315, dam Bell of Friock Mains, 14212, by Laird Darnley, 3748, 2nd dam Polly, 4876, by Lord Lyon 489; 3rd dam Young Mary, 519, by Prince Charlie, 629; 4th dam Mary of Drumflower, 112, by Lochfergus Champion, 449. Benedict, 10315, sire of Barometer, by Barons Pride, 9122, out of Mary MacGregor, 12864, by MacGregor, 1487, he by Darnley, 222, etc., out of Sally, 60, by Prince Charlie, 629, etc. **A. J. Gwynn, Secy, Toluca, Cal**

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There surely isn't another such investment, either on the farm or off it, open to anyone having cream to separate. Why delay making it?

As for the first cost, if you have the ready cash of course there is a fair discount for it, but if not any reputable buyer may secure a DE LAVAL machine on such liberal terms that the machine is actually free of cost, for it will earn its cost and more while you are paying for it.

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she was unable to get up and only lived one night and half the day. She seemed to have no fever and her bag was perfectly cool and not caked at all. There was no passage of dung or urine although I gave her one pound of salts. Please answer through the Cultivator as to what the disease was. —H. F. B., Modesto.

A familiar type of milk fever, and the most fatal before we knew how to treat it. The cow's udder should have been injected with air. Where one has not the regular outfit for this it can be done in the following simple way: borrow a bicycle pump, then a piece of rubber hose, using on the end of it a medicine dropper if you have not a milking tube. Grease the milking tube or its substitute after having dipped it into hot water, then slip it into the cow's teat with the rubber hose attached to the other end of it. Pump the air slowly into the teat until that quarter of the udder will hold no more, then slip out the tube and slip a rubber band around the teat, a visiting card underneath will keep it from cutting too deeply as it must be firm enough to hold the air in the udder, repeat this with every teat. The next cow that you have freshen, this trouble can be avoided by not milking her clean at once, but by leaving for the first forty-eight hours enough milk to prevent the collapsed condition, take as much as the calf will drink and no more.

Advertising Column for Members
OF THE
JERSEY BREEDERS ASSOCIATION
OF SOUTHERN CALIFORNIA

Organized for the general advancement of Jersey interests, to extend knowledge of their superior merits, for the mutual benefit of members, and to increase the profitableness of one of the State's greatest industries. Breeders are requested to unite with the Association.

BULL FOR SALE

Having sold my ranch I am forced to sell Golden of Biltmore. 60082, a grandson of Golden Lad's. Golden of Biltmore is one of the best, ***if not the best*** sire on the coast, several of his daughters less than two years old selling for over $200 each. Highest bidder for next sixty days takes him. If everything is not just as represented, I will give anyone the ***bull free of charge. I sell on merit.***

C. S. Burgess, Riverside, Cal.

Pure St. Lambert Bull
—ST. LAMBERT OF RAMONA, No. 62633,—
heads the Ramona Herd of Registered Jerseys of
Geo. W. Thomas, Riverside, Cal.

The Whiting Jersey Stock Farm Co.

Have moved their herd of Jerseys from San Bernardino, Cal., to the famous Imperial Valley, and hereafter their post office address will be Heber, San Diego Co., Cal., from which they will conduct all their business. Abundant green feed every day in the year will be of great advantage in the best development of our young stock.

Whiting Jersey Stock Farm Co., Heber, San Diego Co., Cal.

LEMONITA HERD
Leffingwell Rancho, Whittier, Cal.

Service bull "SARGENT FOX," 64833. Bred on the Island of Jersey. Sire, the great Flying Fox, that sold at auction for $7,500. Dam, Miss Sargent, reserve winner over Jersey; winner of seven first prizes and five championship cups, "One of the grandest cows the island has ever produced."

VENADERA HERD
. . OF REGISTERED JERSEYS

For Sale, yearling bull Ruth's Gordon King, No. 72360 A. J. C. C. He is of richest breeding on both sire and dam's sides. Also three richly bred heifer calves by Marigold's Exile King, from cows that are good yearly producers. For particulars write

GUY H. MILLER, RIVERSIDE, CAL.

Oakhurst Jerseys

Sons of imported Golden Marquis
out of prize winning and tested dams.
for sale.

L. Bradbury Duarte, Cal.

Kings Victor King of St.
Lambert

At head of herd. Young stock for sale.

H. N. WILLIAMS COMPTON, CAL.

Editor Cultivator: Would you kindly tell me what to do for my cow. She has a cough and makes a wheezing sound in her throat. She is fat; gives seven quarts of milk a day and eats well and looks well.—Subscriber, Otay.

Colds in cows are to be watched carefully as they run readily into consumption. Simple colds in the head are common and they produce a noise in breathing. If in the head inject warmed olive oil to relieve dryness, and make a bran mash and tie it under the cows nose steaming hot, so she will breathe in the steam.

If there is fever present and the cold can be located in the throat, apply a mustard poultice to the throat and then tie it up to keep it warm. If there is fever the old Youatt remedy is good, this is in powders, made as follows:

Powdered digitalis 1-2 drahm; powdered ipecac 1 drahm; nitrate of potash 2 drahms; sulphur 2 drahms. Give at one dose in a quart of gruel, morning and evening until not needed, after the fever has passed, or if there is no fever, the following is useful: guaiacum 2 oz.; sasafras 1 oz.; half a stick of licorice. Boil in a quart of water until reduced to a pint, strain and give half at night and half the next morning.

CARE OF THE FLOCK

The American Shepherds Bulletin very timely says, "It is impossible to lavish too much care and attention on a flock of breeding ewes and these animals will respond to good care and good feed more quickly, perhaps, than any other animals. While sheep seem to like dry cold, or at least are well prepared to stand it, they cannot endure cold, rainy weather without suffering. They need plenty of exercise however, and should, if possible, be fed outside, sheds being provided for them during inclement weather. As to feed, let the ewes have plenty of it and at regular intervals. Change of food is also very important. For roughage, clover hay. corn. fodder and oat straw are the best. Of these, clover hay is the most nutritive, oat straw being next in value. Corn, oats and bran are the best concentrated feeds. About half a pound of a mixture of these should be used daily in connection with the roughage. Corn being the most nutritive of these, a smaller quantity will suffice in the mixture. A supply of salt and clean water should always be within reach of the animals. About breeding time it is absolutely necessary to have the ewes in good condition. Keep the ewes clean, that is, keep their surroundings clean and their sheds well disinfected.

SHEEP AS A COMMERCIAL PROPOSITION

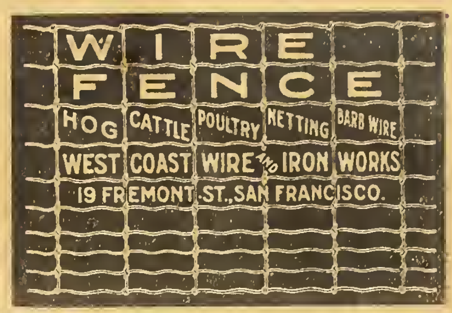
Three years ago a Wisconsin man purchased on the Chicago market a band of eighty ewes at a cost of $240. A few days since he disposed of them, not one having died meanwhile, for $340. Although old and in his judgment past the age of breeding usefulness, another farmer secured them with the object of founding a flock.

The Wisconsin man, while a good sheep handler, did not keep books, consequently his revenue from that small band of ewes cannot be given with any degree of accuracy. During the three years they were on his farm however, he sold lambs to the value of about $500 annually, although to do this it was necessary to keep them until midwinter. This money he regarded as clear profit, charging up the value of the wool against the cost of maintaining the ewes, and raising the lambs. In other words, a band of eighty ewes paid a return of 200 per cent annually on the original investment. These figures appear alluring and the fact must not be overlooked that a band of ewes of this size with their progeny are a constant care on the farm, this being one reason why the native crop is as meager as it is.—Breeders' Gazette.

After reading the various articles recently appearing in regard to a machine for milking cows, and the benefit derived therefrom a young genius of Clinton, Iowa, has conceived the idea of doing away with the cows entirely and arriving directly at the desired end. He says he has a machine nearly perfected into which he can feed the grain, ensilage or other feed usually given the cattle and by a secret process extract the butter fats direct. thereby saving the cost of milking, separating the cream, etc. He also asserts that by a slight change in the mechanism. but by the same process. he can produce condensed milk, sour milk, whipped cream and various other products. The inventor as yet is not ready to submit his machine to the Farmers' Club for their inspection, as some of the minor detail is not complete, but he is very confident that in the near future his invention will revolutionize the whole present system of dairying and incidentally lower the prices of beef by flooding the market with cows. Possibly. however, the beef trust will buy him off for the sake of holding the market at its present figure.

Large lambs make gains faster than small ones and ewe lambs fatten as readily as wethers.

No More Blind Horses for Specific Ophthalmia, Moon Blindness & other Sore Eyes, Barry Co, Iowa City, Ia, have a sure cure


WIRE FENCE
HOG CATTLE POULTRY NETTING BARB WIRE
WEST COAST WIRE & IRON WORKS
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Sharples TUBULAR CREAM SEPARATORS

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DAIRY TUBULAR BOWL—All Apart

"Bucket bowl" separator makers falsely claim to make separators with light, simple, easy-to-wash bowls. We are the only makers who dare show a picture of our bowl — all others refuse. There are secret difficulties about other bowls the makers want to hide. Pictures would betray them. Other makers fear pictures. Our handsome Catalog Z-260 tells these secrets. Write for it today.

THE SHARPLES SEPARATOR CO.
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There are more of the **Sharples Tubular Cream Separators** in use in California than all other mak s combined. Write at once to the State Agents for Catalog R. Address **Joshua Hendy Machine Works**, Separator Dept., 61-77 Fremont St., San Francisco, Cal.

Good Soil

LAND

Water Plenty

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KINGS RIVER DELTA

IS NOT AN EXPERIMENT.

Thousands of acres already sold—Thousands of acres more

TO SELL

On the Famous

Laguna-De-Tache-Grant

Where everything grows.

We are offering a new Subdivision at **$40 per Acre**

With Water from Kings River at 62½ cents per acre. Terms one-fourth cash, balance in eight yearly payments. We have made over 675 sales from this Grant so far and over 3,000 people are living on the land sold. That ought to be good evidence of the merits of the place. Don't you think it would be a good plan to look it up before buying elsewhere?

Low Price

Call or write for Descriptive Circular
NARES & SAUNDERS
135 So. Broadway, Los Angeles

Terms Easy

Profit in the Poultry Yard

BY MRS. A. BASLEY, HOLLYWOOD, CAL.

SOME TRIALS OF CHICK RAISERS.

I had intended writing about the chicken parasites, lice, mites, fleas, and ticks as some of my friends are writing me that they are having trouble with their young chickens, although from what they tell me I think it may come from wrong feeding as well. Of course you all know the three requisites for egg production—Comfort, exercise, proper food. These three are also necessary for the successful raising of chicks whether in a brooder or under a hen.

Comfort, cleanliness, warmth, sunshine and shade, scratching and running and playing, for the baby chicks have their little games. and little fights too—and then the proper food. Now about cleanliness with little chicks, each time a brooder full of chicks is moved out, that brooder should be well washed and scrubbed with scalding suds. I do not believe in putting strong lice-killers, or distillate, or even pure coal oil into brooders, the smell or fumes are too strong and disagree with and sometimes kill the chicks. A friend of mine lent a brooder to a neighbor and on its return found mites in it, she immediately painted it liberally with liquid lice-killer and then sunned it for a week, leaving it wide open all the time, at the end of the week she put her week old baby chicks into it; the next morning several were dead, and every morning she found some dead. I happened to be there and suggested that it all came from the odor of the lice-killer. She moved the chicks and thoroughly washed, scalded and aired it in the sun and had no further trouble. Few people realize what a great cleanser scalding hot soap suds may be. The boiler of good, strong wash suds is emptied out, whereas if put on a fire again for a few minutes and then thrown into the corners of a hennery, it would kill many a breed of young fleas, or used upon a brooder would destroy mites and their almost invisible eggs, besides microbes of tuberculosis, chickenpox and other diseases of infant chicks.

* * *

What to do for head lice on the baby chicks is another conundrum in this week's mail. Every magazine says "grease their heads." I do not I much prefer liberal doses of "buhach" well rubbed in. Buhach is the center of a daisy called Pyrethrum cineraraefolium which grows abundant in Dalmatia, the peasants there making a good living by gathering it. Therefore, in Europe it is called Dalmatian powder. It is also called "Pyrethrum" in the East, but the best and strongest is grown in California. It is as harmless as a daisy to animals or chickens but it contains an essential oil which asphyxiates all insects. It will kill all lice, fleas and even the common house fly. In the course of my travels in Africa I saw an Arab come out of a house with his bare legs so covered with fleas that it looked as if he were wearing boots.

In another place I was warned, "do not enter that room, it swarms with fleas." A pound of that excellent powder was scattered over the floor and not one flea survived and the room was quite habitable and used afterwards for years.

At another time I was staying with a friend in New York State, her kitchen had been painted, and it seemed as if all the flies in the village congregated there. I had some buhach and a little powder gun. I closed tightly every door and window and blew bubach into the air till it was like a cloud of dust. Then came out and looked in through the window, the flies flew around as if drunk, and finally they and the buhach feel to the floor where they crawled around stupified, and before they could recover, whilst they were still asleep, we swept them up and put them into the kitchen fire. Not one fly was left.

* * *

After my various experiences with this powder, I decided to try it on chicken lice, and found it comes up to my expectations; it will kill any and all lice and is perfectly harmless to chickens, and also to turkeys. It will kill fleas on cats and dogs, and mites on canaries.

There is only one drawback, and that is, that the deadly essential oil in it evaporates quickly. it must be fresh or it is valueless. and it should be kept for this reason in a tin box. tightly covered. Also as it is expensive. it is frequently adulterated.

Next to buhach, Lambert's Death to Lice is the best insectide I know of. It is composed principally of tobacco dust. Some of the insect powders contain carbolic acid. or napthaline. in such strong quantities that although they may kill the vermin, they prove very injurious to little chicks.

A sucessful poultry breeder, a friend of mine, had a young lady staying with her to help her and also learn the poultry business. She gave the girl the brooder house to attend to, directing her as to the cleaning, feeding, scalding water vessels; keeping sweet milk, and chick feed always there, etc. My friend was a very busy woman, and had her own routine of work, but one day she discovered the girl had allowed lice to invade the brooders. Then there was trouble.

Brown and White Leghorns
Prize winners at L. A. Show, '06. Eggs from good laying strains. Eggs, special matings, per 15, $2.00. Incubator lots, $6.00 per 100.
Hemet Poultry Yards, Hemet, Cal.

THOROUGHBRED YOUNG CHICKS
White Leghorns, 10c.
White Ply. Rocks, 12½c.
Wm. A. GREEN, Box 401, ANAHEIM, CAL.

BRONZE TURKEYS
Hart's strain. Winners of five firsts at Los Angeles Show, '06, and always winners wherever exhibited. Write for prices.
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SINGLE COMB WHITE LEGHORNS
Thorough-bred Stock. Eggs, $1.50 per 15
INDIAN RUNNER DUCKS
Eggs, 1.50 per 12.
Send for illustrated catalogue
John P. Boden, 638 Second Street, Watsonville, Cal.

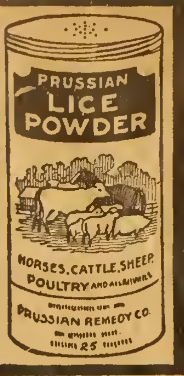
Blue Andalusians
At Los Angeles, 1906, our strain in a class of 68 Andalusians with 16 birds won more firsts than all our competitors combined. Eggs, $2.50 and $3.00 per 14.
Blue Ridge Poultry Yards, 128 Avenue 32, Los Angeles

White Minorca and Buff Orpinton Eggs
$1 per 13. $1.75 per 26.
Indian Runner Duck Eggs, 65c per 12. $4 per 100. All healthy and standard bred stock.
H. C. Boyer - Toluca, Cal.

White Rocks Exclusively
Limited number of young birds. Eggs from prize winning, producing strain, $2 per 15 or $5 for special mating. Write for circular.
Mrs. Rhoda E. Durfee, 1110 W. 1st St., Santa Ana, Cal.

Banning Poultry Yards
White Leghorn and Barred Rock eggs for sale, $1.00 for 15, $4.00 per 100. Fertility guaranteed. Correspondence solicited.
Morris Bros., Props., Banning, Cal.

$12.80 For 200 Egg INCUBATOR
Perfect in construction and action. Hatches every fertile egg. Write for catalog to-day.
GEO. H. STAHL, Quincy, Ill.



KILLS LICE on POULTRY!
Cattle, Hogs, Sheep, Etc. Easy to apply—dust it on.
"Rids calves of Lice"—O. Voss, Armour, S. D.
"Killed every louse in my flock of 250 hens"—D. Perry, Monroe, Wis.
Price, 25 and 50c a Pkg. By Mail, 40 and 70c.
Prussian Stock Food and Remedy Co, St. Paul, Min

Buff Wyandottes
Eggs from pens mated with 2nd prize Cockerel or 2nd prize Pen L. A. Show, $2.50 per 15. Stock and yards at San Gabriel. **Wm. J. Bodger, 251 S. Main St., Los Angeles, Cal.**

Blue Andalusians
From prize winning and egg producing strains. Eggs, $1.50 and $2.00 per 15; incubator lots, $6.50 per hundred.
C. E. Chittick, 124 Avenue 34, Los Angeles, Cal.

Eggs from World's Fair Buff Leghorns $3 per 13, $7.50 per 100, $5 per 50. Commissioners' Cup for best display California bred poultry at Lewis and Clark Exposition. ***Barred Rock*** eggs, $1.50 per 13. ***LINDGREN BROS., Kingsburg, Cal.***

Buff Plymouth Rocks
A few fine cockerels $2.00 to $4.00 each. Eggs, $2.00 for 15. Very choice Eastern stock.
F. W. Tutin, Riverside, Cal.

WHITE MINORCA EGGS
Best of Stock. Great Layers.
$1.50 setting, $8 100, $65 1000.
S. W. MORGAN,
Sunnyside, San Diego Co., Cal.

Single Comb White Leghorns
Winners of the Dodge Sweeney Cup
Best display White Leghorn in Sonoma County at San Francisco Exposition, 1905.
1st pen, $5.00 per setting; 2nd pen, $3.00 per setting. Eggs from free Range 5 cents above Chronicle quotations. Stock for sale.
A. H. M Davies, Western Ave, Petaluma, Cal

WHITE WYANDOTTES
200-250 Egg Fowls **16 Prizes San Francisco**
Scored by T. E. Orr, eminent Eastern Judge. Our "Cream of the Coast" White Wyandottes swept the deck at San Francisco. Unsurpassed as layers and as exhibition birds.
Beautiful Circular Free, giving pictures of our prize winners, description of our matings and prices. Settings and Incubator Lots; Pens and Cockerels.
Eggs, $2.00, $3 00 and $5.00 per 15. Per 100, $7.00, $10.00 and $15.00. Clear eggs replaced. **We prepay express.**
CAPITOL AVENUE POULTRY FARM
A. L. R. MANTZ Rural 21, Box 98k SAN JOSE, CAL.

Mission View Poultry Ranch
Largest Breeder of WHITE WYANDOTTES on the Pacific Coast
¼ Wild Mammouth Bronze Turkeys.
1906 Winnings 32 Prizes Write for Circular Clear Eggs Replaced
MRS. C. D. HUBBARD,
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PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK
BUYS THE WORLD'S FAMOUS EGG FOOD NO. 4
MIDLAND
IF YOU WANT EGGS YOU WILL FEED NO OTHER
Used by all the largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders
The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the **GOLD MEDAL** at the St. Louis World's Fair for greatest hatch, with 40 different makes of incubators in competition. How's that?
St. Louis, Mo., Dec. 8th, 1604.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A Filcher, Commissioner.
And Now Comes New Reward for Merit:
Read the following telegram received from the Lewis & Clark Exposition at Portland:
"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."
WRITE FOR CATALOGUE 47—A BEAUTY
PETALUMA INCUBATOR CO.
Main Office and Factory, Petaluma, Cal., Box F. Los Angeles, 505 South Main Street
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SHADE'S **Rhode Island . . . Red Farm**

Automatic Chicken Feeders.
Shade's Egg Food sold to consumers only.
San Bernardino, - - California.

Silver Spangled Hamburgs—Eggs for sale. Vigorous stock, eggs sure hatch. Pullets ten months old have laid 100 eggs and still laying. Los Angeles Sunset 'phone Flora 2209. Pasadena Sunset Suburban 185. Arroyo Verde Springs. Pasadena Avenue, main road, near Ostrich Farm, South Pasadena, California.

Chickens and Eggs

Having handled Poultry in this market for the past thirty years, we can give you the best results and prompt returns.

D. E. Allison & Co., Inc.
119-123 Washington St., San Francisco

White Wyandottes

Eggs for hatching from 5 pens of standard birds. 1st Cock, 1906 L. A. Show and other prize winners. $10 per 100, settings, $1.50, fertility guaranteed. Special matings and stock a matter of correspondence. ***Mt. Holly Poultry Yards,*** E. W. Preston, Prop., ***Hollywood, Cal.*** Sunset Phone, Hollywood, 901.

EGGS FOR HATCHING
from a heavy-laying strain of
SINGLE COMB WHITE LEGHORNS
I guarantee 100% fertile. Write for prices.
Golden State Poultry Yards, Lordsburg, Cal.
T. E. Mills, Prop. Home Phone 1720

SONOMA-AMERICAN INCUBATOR

Send for large circular fully describing these machines.

Sonoma-American Incubator Co., - Petaluma, Cal.

Eggs Wanted for Hatching

Our big adobe incubator brings the best results. Send us your eggs and we will return the chickens. Young Chickens and Turkeys Wanted.

Bamboo Poultry Ranch - Glendale, Cal.
AIKEN & CO., PROPRIETORS

BARRED ROCKS
EXCLUSIVELY
Send for 16-page 1905 Catalogue
H. R. CAMPBELL
Box O PETALUMA, CAL.

Mountain View Poultry Ranch

S. C. White Leghorns—Heavy layers. Eggs, $1.50 per 15, $5.00 per 100.
Indian Runner Ducks—Males for sale. Eggs, $1.00 per 13, $3.00 per 50, $5.00 per 100.

Mrs. J. L. Updyke - Fullerton, Cal.
Successor to Jacob Kreger

Rose Comb White Leghorns
High Grade Buff Orpingtons
Varian's Poultry Yards
P. O. Box 666. Home Telephone 1886
895 N. Catalina Ave., PASADENA, CAL.

High Grade **S. C. Rhode Island Reds White Plymouth Rocks and Buff Leghorns**

All new matings this season. Some of the breeds personally selected by the owner in the east last fall. Strong hardy stock, bred to lay and to win. Our Reds won at San Francisco, San Diego and Los Angeles shows. Best eggs $2.00 for 15, $5.00 for 50. From good utility matings $1.00 for 15, $3.00 for 50.

Lake Avenue Poultry Yards
757 N. Lake Avenue - Pasadena, Cal.

Little Chicks Just from the incubator of the following varieties and prices:

White and Silver-Laced Wyandottes
$12.00 per 100
White and Barred Plymouth Rocks
$10.00 per 100

Black Minorcas	White Leghorns
$8 00 per 100	$7 00 per 100

These are all from first class stock—none better at the above price. We guarantee safe delivery anywhere we can reach within 72 hours of San Jose.

J. S. SMITH,
Box 526 SAN JOSE, CAL.
Hatchery—450 W. Santa Clara St.

In Your Own Home
On Free Trial

An "Old Trusty" will prove to you that it will do the work and satisfactory to you. If you are pleased we get our pay; if not, send back the Incubator. One carload sold on Trial, and not one returned. M. M. Johnson, Clay Center, Neb., makes the

"OLD TRUSTY"

Johnson Made It

He has been making Incubators 14 years; we haye been selling them 8. Get big free poultry book No. 9.

McClanahan Co., Los Angeles, Cal.

The girl had read that lard and kerosene put on the heads and necks would kill lice and she declared that the insect powder had no effect whatever, so contrary to my friend's wishes, she prepared some lard and kerosene and one day when I happened to visit that ranch I found her seated on the ground in one of the runs. with a can of lard and a swab of rag and she was catching each chick. anointing it liberally on its head and neck; some went into its eyes; so it proceeded to use its wings as a pocket handkerchief. Poor little things! I really think that greasing injured them more than the lice would have done. My friend wrote "Miss ——— has left; fighting lice was too hard work; her greasing did not exterminate them; what shall I do?"

I replied that she had better take a bowl of good hot soap suds; put in thirty drops of carbolic acid; take an old tooth brush and on a sunny morning brush the little heads. I thought about three applications at intervals of three days would eradicate the lice. She did so and found it excellent but used buhach on the turkeys.

Next week I will talk on feeding little chicks the balanced ration of 1-3 and why.

A MAMMOTH POULTRY PLANT.

The fame of Petaluma's large chicken industry has spread far and wide, and it is generally known that this is the home of the prolific hen and noisy rooster. It has been the pleasure of the writer to make several trips about that community and observe the vast number of industrious White Leghorns which are daily adding to wealth. It is estimated that the output of poultry and eggs from this community brings back to it in good yellow gold practically $2,000,000.

Some of the ranches cover anywhere up to one thousand acres. But at the same time some of the most successful and profitable plants, close in town, are conducted on very little space. One of these, which may well be called a model as to its economic handling is the mammoth poultry plant of the Must Hatch Incubator Co., although it occupies only two acres on which are hundreds of profitable birds as well as the manufacturing plant of the incubator factory.

Mr. A. E. Bourke at the head of this concern has spent several years of hard work in bringing this successful house to its present magnitude. We give on this page an illustration which will convey an idea of its size and management. Considering that Mr. Bourke went to Petaluma with only two horses, a wagon and a capital of practically ten dollars, it is remarkable to note the success he has achieved.

The plant consists of a large incubator house twenty-four feet wide and one-hundred and sixty feet long, filled with Must Hatch Incubators. In this room there is a combined length of 320 feet of incubators, with a total capacity of 50,000 chicks per month. Between these rows of incubators is a track extending the entire length of the building, on which is run a car or table especially constructed for the conveyance of eggs and chicks to and from the incubators and also for turning the eggs on the trays, an operation which has to be gone through twice a day.

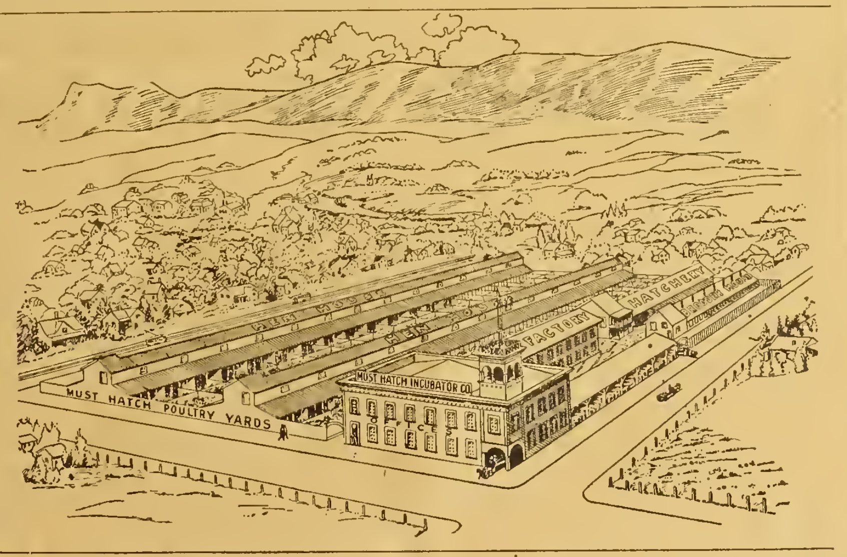
The most remarkable portion of the poultry plant is the alley way between the hen houses, and its arrangement for economic feeding and gathering of eggs, and care of the poultry. The entire upper story of this immense building is used for the storage of feed and so perfect is its arrangement that dry feed for every pen is always at hand, thus making it an easy task for one to look after 1700 hens.

A neatly arranged little car is used for conveying the mashed food and the collection of droppings from the roosts making it an easy task for one man to care for this house. On either side of the aisles are constructed two concrete mash feed troughs, with running water at hand for keeping them and in fact the entire house scrupulously clean. The floors of all the pens are also of concrete which facilitates the changing of the scratching litter which is always kept pure and clean, thus insuring the hens against disease, lice, etc.

Mr. Bourke says that the plant averaged last year a total of 425,000 chicks.

The factory for the construction of the Must Hatch Incubators has the same features of economizing work as have the poultry and incubator houses, which accounts for the large number of these successful machines that are being put out every year.

The C. H. Lilly Co., are this year pressing the sale of these incubators which are largely sold not only in California, but in the entire northwest.



No Results No Pay

WE have spent a vast amount of money experimenting with Poultry Feeds—compounding, grinding and mixing different grains with seeds, alfalfa and meat in hundreds of combinations. Then feeding it and watching what happened.

The result of this time and money is

Purina Poultry Feeds

They will cause a hen to lay all the eggs she should, day after day, year after year, winter and summer, and will keep her healthy and vigorous every minute.

And they will do it every time—not just once in a while.

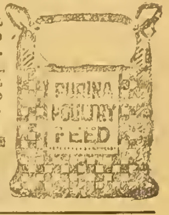
But don't take our word for it—try the Purina Feeds on your hens at our expense.

If the results don't come, just tie up the bag and write us and we'll return every penny of your money and tell you where to send the balance. You are not out a cent in making the trial, for we will deliver through your dealer or direct, FREIGHT PAID, and the feed used in testing will cost you nothing.

Ask for particulars about our FREE TEST Plan. Write today—you can't afford to wait.

This is the Money Back Line——
Ask for particulars about our FREE TEST Plan. Write today—you can't afford to wait.

ACME MILLS CO.
PACIFIC COAST MANUFACTURERS
PORTLAND, OREGON



Brown Leghorn and White Rock Eggs

For Sale, $1 per 13, $6 per 100, also two fine White Rock Cockerels at $2 each.

Willis F. Wiesmore, 835 High Ave., Redlands, Cal.

White Wyandotte Eggs

For hatching, from standard bred birds, **$1.50 per 13.** Hens and pullets for sale.
A. P. ROBINSON, Riverside, Cal.
263 Prospect St. near Park.

Indian Runner Ducks

Eggs for hatching from fine, healthy, thoroughbred stock. Egg, 75c per 13. **M. T. Taylor, 256 N. Eastlake Ave., Los Angeles, Cal.**

White and Buff Wyandottes

Prize-Winning, Egg-Laying,
Wealth-Producing Strain.
M. E. DILLINGHAM, SAN GABRIEL, CAL.

White Plymouth Rocks

First class stock. Eggs, $1.00 per 13, $2.00 per 30. Indian Runner Ducks—$1.00 per 15, $2.00 per 33. A few ducks for sale. **H. S. Thompson, 125 W. Avenue 54, Los Angeles, Cal.**

Buff Wyandottes

Trios. $6 to $15. Cockerels, $3 and up.
O. S. Hofman San Jacinto, Cal.

$8.00 COCHINS $8.00
A Trio—Buff, Black or White

Send for circular. giving undefeated show records. These are the best winter layers, finest table fowls, and by far the most healthy and hardy. Eggs, $2.00 per setting of 15. Prize winners, Eggs, $3.

HARRY McINTIRE,
SAN DIEGO. - - - CALIFORNIA.

Buff Orpingtons and Barred Rocks **Pure Bred Stock**

Eggs $1.00 per 14. Incubator lots, $5.00 per 100
85 per cent fertility guaranteed.
Also, a limited number of Toulouse Goose Eggs at 15c each. Telephone 1767.
MRS. ALBERT MILLER,
1913 Ricardo St. Sta A, Los Angeles, Cal.

S. C. WHITE LEGHORNS

I can furnish you with first-class eggs that will hatch strong, vigorous chicks, and give you satisfaction. $2.00 per 15, or $7.00 per hundred. Stock for sale. All eggs and stock purchased of me shall give perfect satisfaction. I make this a point.

Monte Vista Poultry Farm
L. D. Pettit, Mgr. Corning, Cal.

Huskins' White Wyandottes

Prize winners for two years, 1905 and 1906, at L. A. Eggs for hatching from standard bred stock, $1.50 per dozen, or if you mention Cultivator, will send thirteen.

A. W. Huskins, 713 Waterloo St., ***Los Angeles***

White Plymouth Rock Poultry Ranch

Eggs for hatching from First-Class Stock; $6.00 per 100, $1.50 per setting 15 eggs.

J. T. DAVIS, Prop. POMONA, CAL.

Blue Andalusian Eggs

$1.50 and $2.00 for 15, $7.00 per 100. Free range. I raised and sold cockerel winning first prize at late L. A. poultry show. Stock. ***Mrs. J. S. Duff, 3145 S. Hoover St., Los Angeles, Cal.***

Rhode Island Reds

Fine stock of cockerels and hens for sale. Eggs, $1.50 per setting.

C. E. DAVIS, REDLANDS, CAL.

S.C. White Leghorns Indian Runner Ducks

Eggs, $1 per setting, or $5 per 100. Leghorns of McFarlane strain Fertility high, 80% guaranteed. ***J. E. Beadle, 901 No. St. Louis St., Los Angeles.***

WILLARD POULTRY FARM, HYNES, CAL.

Mrs. F. T. Hungerford, Manager

INDIAN RUNNER DUCKS

At San Francisco show, 1905, I won 2nd and 3rd on young drake and 1st on young duck, with 3 entries. At the 1906 Los Angeles show, 1st on old drake, 1st and 2nd on young drake, 1st and 2nd on young and old duck and 1st on pen. Eggs—$1 for 13, $3 for 50, $5 for 100. Hens' eggs all ordered up to April 1st.

For Sale *My Entire Flock Buff Orpingtons*

This includes some male birds imported direct from Cook. Six breeding pens of nine females each, also hens and pullets suitable for market egg pens, and about 300 brooder chicks at all ages.

Will make price on entire flock or will sell in numbers to suit. Take Pasadena short line car to Lyndon street, walk east to end of street, first house south.

Ed. M. Burnell, Box 265, South Pasadena, Cal.

Sunset Phone, Pasadena Ex., 1219

FOR SIX YEARS

Albers' Black Minorcas

Have led in the shows every year, and they lead all breeds in egg production all the time. Eggs in large or small lots. Stock for sale. Circular free.

GEO. R. ALBERS

4849 MARMION WAY LOS ANGELES, CAL.

30 DAYS TRIAL

Buy From Our Factory—Save One-Third.

PRACTICAL INCUBATORS positively the best. Hatches more and stronger chicks. 10 YEARS' GUARANTEE

Cat. free. PRACTICAL INC. CO., 720 S. 11th St. San Jose, Cal.

Why do you pay $5.00 to $8.00 per hundred for eggs for hatching when you can get just as good eggs from just as good stock from us at one half that price? Our stock is large and healthy. The hens lay lots of large white eggs that run as high as 98% fertility. We sell eggs in incubator lots only at $2.50 per hundred.

Avenue Poultry Yards, Ventura, Cal.

EVILS OF CROSSING BREEDS OF FOWLS.

The evils of crossing are many. None is more certain than its influence over size, shape and color of the eggs, both externally and internally. A mixture of breeds makes a change in the shape of the egg and the color of the shell. The size, shape and color of eggs affect their value. as the same qualities affect the value of fruit, why not have at least some consideration for the improvement of eggs?

When selling time comes, the fine-shaped, clear-colored, smooth-shelled eggs bring the best prices, as does the well-rounded, even-shaped dressed poultry of attractive color; while over-fat, ill-shaped, off-color carcasses are a drag on the market. The product of badly selected crosses may be ill favored through unattractive color, the result of a cross of yellow-skinned fowls with those having the clear, pinkish-white shade. If you mix yellow paint with pinkish-white, you lose the attractiveness of both.

To grade our flocks from the common to the better kinds is possible provided you stick to the one kind of standard-bred males in your flock, have all the males of one kind and continue from year to year the use of the same kind only. Never change from this breed of males, and do not use any of the half or part-bred males as breeders. Supply yourself each year with a new, fresh line of males for the next year, from eggs secured from well-bred stock.—County Gentleman.

HOW TO TELL GOOD LAYERS.

To learn how to tell the best layers of one's flock comes only from experience and close daily contact with the fowls. One can hardly tell another how to pick out the best layers. The attention can only be directed to certain features of the business, which will serve as guides in the matter of making such selection. It is only one of the many details of the business that have to be closely studied in order to master it, even to a fair degree of certainty. The lesson is not so difficult to learn as one might suppose, only requiring close observation and ractice. The only way to select the best layers is by elimination, first selecting the lazy birds—the drones. They are generally the last birds off the roost in the morning and the first birds on the roost at night. They may generally be found during the day handy to the feeding place or loafing in some sheltered nook. They generally have a colorless comb and are fat and of poor form. On the contrary, the layer is off the roost singing and cackling at daybreak, and often before, and when not on the nest will be found rustling and working, either scratching in the litter for the hidden grains or roaming over the pasture and plowed ground in search of green stuff and worms. She has a red comb, a firm characteristic of her breed, a lively and happy disposition, and carries with her an air of importance and usefulness. She shows an interest in her work and an ambition to pay for her keep and more, too She shows a love for the caretaker and evidently likes to be noticed.—H. L. Blanchard.

One is not likely to get rich suddenly in poultry business, but one can meet a lot of good fellows among poulrtymen and make a living easier than in any other business.

Standard Bred S. C. White Leghorns

EXTRA LARGE BIRDS AND HEAVY LAYERS. Eggs, $2 per 15; $8 per 100; $60 per 1000 from January until July only.

CAPTAIN MITCHELL SANTA BARBARA, CAL.

Author of "A Practical Poultry Plant for Southern California," $1.25 cloth binding, on sale by Calif. Cultivator

Dean's Pacific is an Incubator built on scientific plans and has all the latest improvements. Every machine guaranteed. "Facts From Experience" and Catalog for the asking. Address ***Dean's Place, 2509 Central Avenue, Los Angeles.***

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LEE'S LICE KILLER EGG MAKER | LARGEST POULTRY SUPPLY HOUSE IN THE U. S.

HENRY ALBERS 315 S. MAIN ST. LOS AGNELES

West Coast Chick Feed

A perfectly balanced ration for the growing chicks. All pure food, no filler, no waste, hence cheapest. Keeps them growing and healthy. Made by

WEST COAST STOCK FOOD CO.

818 San Fernando St. (through to Alameda) Los Angeles, Cal.

Caponizing Set

Double Your Profits by Caponizing.

Complete with Instructions, $2.50, Postpaid

STOCKMEN'S SUPPLY CO.

FRESNO, CALIFORNIA

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MARDEN EGG FARM

HYNES, CALIFORNIA

Breeders of S. C. White Leghorns Exclusively

Fine Feathers alone do not make the profitable hen. Our fowls have the reputation of being ***extra large, handsome*** and ***extra heavy layers.*** Last season, our eggs averaged over 95 per cent. fertile. ***Remember***—In getting eggs from us, you do not get them from the general runs. We have but one grade of eggs to sell for hatching and those are from our breeding pen composed of only the choicest fowls, selected from hundreds that are ***bred to lay.*** Hens that approach the ***200 egg record.***

Price of Eggs—$1.50 per 15, $5 per 100. ***Send for Illustrated Catalogue. Address,***

LEO. W. MARDEN, Manager

LAYING HENS

We have a few choice 1½-year-old Thoroughbred White Leghorn hens, which we are offering at a sacrifice. In order to make room for our young stock we are offering these fowls at $15.00 for 12 hens and 1 rooster or $100 per 100.

We also have a number of 5-months-old pullets, also of the same variety, on which we can name you the same price. If your stock needs renewing, send in your order at once, as they are going fast.

We have a Hatchery of 50,000 chicks per month capacity, from which we are making shipments daily to all parts of the Coast. If you need any just hatched chicks have your order booked at once, so as to get them on the date desired. Our price for just hatched chicks is $7.50 per hundred f. o. b. Petaluma.

We manufacture the famous MUST HATCH INCUBATORS AND BROODERS and a complete line of poultry supplies of every description. We cater to the best hatching egg trade on the Coast.

Before purchasing write for our new illustrated Catalogue B, which contains descriptions, prices, etc., of all our goods.

Must Hatch Incubator Co., Petaluma, Cal.

SETTING HENS.

A writer in the seventeenth century gives interesting directions on how to set a hen. Among other things he says:

The best time to set hens. to have the best, largest and most kindly chickens, is in February, in the increase of the moon so that she may hatch or disclose her chickens in the increase of the next moon. It is held a brood of March chickens is worth three broods of any other; you may set hens from March till October, and have good chickens. but not after by any means, for the winter is a great enemy to their breeding.

"A hen doth sit twenty-one daies, just, and then hatcheth, but peahens, turkies, geese, ducks and other waterfoule sit thirty; so that if you set your hen, as you may doe upon any of their eggs, you set her upon them nine daies before you set her upon her owne.

"A hen will cover nineteen eggs well, and that is the most in true rule she should cover but upon what number soever you set her, let it be odde, for so the eggs will lie round, close, and in even proportion together.

"It is good when you lay your eggs first under your hens, to marke the upper side of them, and then so watch the hen, to see if she busie herselfe to turn them from one side to the other, which if you find one doth not then when she riseth from her eggs to feed or bathe herself, you must supply that office, and turn every egg yourselfe.—Poultry.

EGGS AS FOOD.

Eggs without doubt stand next to milk in available food material for the sick, as they are easily digested and absorbed if raw or properly prepared. Physiological chemists tell us that 97 per cent of the albumen and 94 per cent. of the fat are absorbed into the blood stream. These same chemists tell us that eggs are a complete food for young mammals, as they contain in correct proportion, the tissue-building material, in form of albumen (white) and mineral matter, in the form of phosphorus, lime, potassium, iron and sulphur; the heat and energy material in form of oil (fat) in the yolk and a large amount of pure water.

Owing to the lack of starch and sugar an egg cannot be called a complete food for the adult; hence bread, rice or some starchy food must be served with eggs. To render the food complete, the sick must be fed as children are—that is, with foods that are easily and quickly digested and absorbed, for the digestive organs are always weak. Eggs, therefore, are among the most valuable of foods for this purpose.—Southern Poultry Courier.

PREVENTION OF POULTRY DISEASES.

Among poultrymen the idea is steadily gaining ground that success in doctoring fowls for disease is a very serious misfortune, because it prompts the poultryman to adopt a wrong basis and a bad footing to work upon. Having once succeeded he acquires the habit of fussing and drugging with the inevitable result that the birds contract the habit of getting sick. In general, the measure of success in this direction will be the exact measure of misfortune; for it means increased number of sick fowls. On the other hand, leading poultrymen everywhere agree with the prominent physicians that prevention is the one universal, practical basis. They therefore strive to keep their birds in perfect health by every reasonable and practical precaution with respect to sanitation, ventilation, exercise, light, shade, food, water, etc., and to management in general. They reason that healthy hens are happy hens and only such are profitable to keep.—Orange Judd Farmer.

White Wyandotte Eggs
For hatching. Pure Dustin & Hallack strain. From 1st Pen, $3.50 per setting, 2nd pen, $2.50.
Mrs. S. H. Church, 505 S. Main St., Los Angeles

White Plymouth Rocks
Standard Bred. Eggs for hatching, 10c each. Incubator lots, $7.00 per hundred.
C. M. Johnson, Gardena, Cal.
Yards at Strawberry Park, on electric lines.

For Sale—Eggs for Hatching
R. I. Reds and S. C. White Leghorns. Reds are imported stock. Leghorns are Howard strain. Pair of fine Orpingtons and cockerels for sale. ***M. J. R. Cutting, Monrovia, Cal.***

Single Comb Brown Leghorns
Exclusively
Stock for sale and eggs for hatching. Eggs from first pen $2.00 per 15 eggs, second pen $1.50 per 15. Incubator lots for $6.00 per 100 eggs. They have always won first prize whenever shown. Large birds and heavy layers.
W. E. Mercer - - Ventura, Cal.

A POULTRY COLONY
NEAR LOS ANGELES
Is at present being formed for the purpose of mutual benefit. Situation unexcelled; plenty of good water, splendid soil and close to town. For particulars apply to
Anna L. Pinkerton
Realty Trust Company, 129 So. Broadway, Los Angeles, Cal.

Fairview Poultry Yards
SILVER LACED WYANDOTTES
Two pens, both headed by prize-winning cockerels; 1st at Los Angeles and 1st at San Diego. Four prize-winning females in pens. Eggs, $1.50 per 15.
WHITE PLYMOUTH ROCKS
Special mating, pen headed by Fairview Prince, a son of the best layer in our yards, $1.50 per 15. Five pens large MATURE hens mated to vigorous Cockerels, $1 per 15 eggs; $5 per 100. Eggs from these pens specially recommended for incubator hatching.
A. E. NELSON, EL MONTE, CAL.

Golden Crest Poultry Yards
White Leghorns—Eggs, 50c per setting, from pens of Petaluma's best laying strain. $3.00 per 100.
Barred Rocks—75c per setting.
Prize winning **White Crested Black Polish** my specialty.
Geo. H. Randall
C St., Santa Ana

EGG FOOD A·C·W IT FILLS THE BILL
Start Right
Then go ahead and success will be with you. Start by feeding A. C. W. Chick Food—specially prepared for the immature and weak organism of little chicks. We use no cheap seeds or shrivelled grain—when you buy A. C. W. you buy nothing but the best materials scientifically mixed by **special machinery.**
This is a **new food** manufactured by an old firm (12 years in business) and some dealers do not keep it **yet.** If yours does not, write us direct; we will supply you.
See that the **seal is unbroken;** that it is our guarantee of purity on each sack.
Feed A. C. W. Chick Food and raise live, strong chickens. No money in dead ones.
Agricultural Chemical Works **901-907 Macy Street Los Angeles, Cal.**
Phones: Sunset, Boyle 3; Home, 6063
Manufacturers of Bone Meal, Blood Meal, Meat Meal, Shell, Grit, Etc.

THE FEATHERLEY FARM ORPINGTONS
Over 30 prizes, specials and cups in **Buff, Black and White Orpingtons** on 27 entries this year at San Francisco, San Diego and Los Angeles. Bred for utility and egg purposes, as well as prize winning qualities. Eggs from $2 to $3 a setting. Write for free mating list, describing my ten prize yards. **P. L. Harley, Box C, Redlands, Cal.**

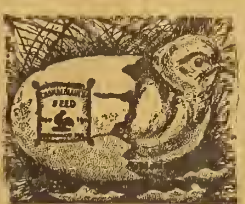
The Stockton Incubator
Is now manufactured under new management and is in every way put up as a first-class machine. Our 1906 model is a perfect working incubator, economical to run and gives a fine hatch.
Winner of silver medal at Pan-American, also medal at California State Fair. Write for circular and information.
Stockton Incubator Co.
Marshall & Barnes, Props. Stockton, Cal.

Emery's Pure Meat Meal
Don't believe all we say, but just enough to buy our Poultry Foods
sk your nearest dealer for them and take no imitations
Emery's "B. B. & B."
THE PACIFIC GUANO & FERTILIZER CO. Successors to N. Ohlandt & Co **San Francisco, Cal.**

EGGS
Barred Rocks, White and Brown Leghorns, $5.00 to $6.00 per 100, $1.25 to $1.50 per 15. White Wyandottes, $7.00 to $8 00 per 100, $1.25 to $2.00 per 15. Reds, Orpingtons and White Rocks, $6 00 to $7.00 per 100, $1.25 to $1.50 per 15. Other kinds, prices on application. You can buy cheaper eggs than we sell, but are they good? Are they guaranteed? Ours are. Sole Agents Standard Cyphers Incubators.
Kloninger Bros. 838 S. Main St. Los Angeles

Excelsior Dry Chick Food
Will raise 98 per cent of your chicks. **Price, $3.50 per 100 lb.**
—Excelsior Egg Food—
Will make your hens lay eggs. **Price, $2.00.**
Our assertions have been proven by those that use them. The live articles will do all we claim. All we claim is **results.** Results produce Chicks and Eggs. Chicks and Eggs produce **cash.** Cash is what you raise Chicks and Eggs for. Are we right? We will prove it if you use them.
Del Monte Milling Co.
242 Central Avenue - - Los Angeles, Cal.

Chamberlain's Perfect Chick Feed



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World's Chick Feed of To-Day. The only original **Dry Chick Feed.** All others are worthless imitations. **Chamberlain's Perfect Chick Feed** was used exclusively at the great St. Louis World's Fair during the 7 months. This the highest compliment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.
CHAMBERLAIN'S PERFECT MASH EGG FEED,
THE WORLD'S GREATEST EGG PRODUCER.

"Nothing Just as Good"

GERMAIN SEED CO.,
Pacific Coast Agents. LOS ANGELES, CALA,
SPECIAL PRICES ON TON LOTS.
Distributing Agents: FREDERICK BROWN, San Jose; CHAS. H. NEARPASS, San Diego; CHANNEL COMMERCIAL CO., Santa Barbara and Ventura.

Veterinary

BY DR. W. J. OLIVER,
318 East Second St., Los Angeles

To the end that this department may be made as valuable to the subscribers as possible, we ask observance of the following: Be sure to state in full the history of the case, location of the disease and the conditions under which the animal has been kept just before and since the disease appeared. Give your name and address, which will not appear in the paper if you so request. No charge whatever is made for such questions as are answered through the colums of the Cultivator, but when an immediate mail answer is wished Dr. Oliver asks an additional fee of $1.00 and will give immediate attention and reply by mail. In such case write Dr. W. J. Oliver, 318 E. Second St., Los Angeles, Cal.

Questions should be in by Monday to be answered in the following Friday's paper.

MANGE.

Editor Cultivator: Will you please answer following in Cultivator? What is good to put on dogs that seem to be troubled with itch. They have no fleas, but are constantly scratching until they make sores?—S. H. C., Duarte.

Your dog has mange. Wash the dog with Kreso Dip about one to fifty of water; repeat twice a week.

* * *

Editor Cultivator: Will you kindly tell me what to do to a dog that is scratching herself awfully, especially lately she is pulling all the hair down and the skin is getting sore. No lice, no fleas and nothing at all on her; seems to me rather a skin disease?—P. A. T., Fowler.

Your question is answered in another item this week.

Climate and Crops

General Summary.—The weather stormy and unsettled throughout the entire week in all parts of Californit. Heavy rains fell day after day and the warm weather in the mountains has caused dangerouously high water in many parts of the State. The rains of the preceding week had filled all reservoirs and streams were running nearly bank full. The great volume of water added by the storms of the present week will result in overflows in many parts of the State.

Sacramento Valley.—Heavy rain continued throughout the week. Southerly winds prevailed from Tuesday until Sunday. On Friday the wind reached a velocity of 36 miles per hour A thunderstorm is reported at the close of the week. Warm weather in the mountains caused a rapid melting of the snow which, added to the heavy rains, resulted in high water and freshets. The snowfall in the mountains is heavier than it has been for years. The week closes with showery conditions continuing and every likelihood that large areas will be overflowed. The lowest temperature was 44 degrees on Tuesday and the highest 64 degrees on Thursday.

Coast and Bay Sections.—Continuous rains prevailed throughout the week with moderate southerly winds increasing to moderate gales on Thursday. The rainfall was exceptionally heavy for this period of the year. On Friday over an inch of rail fell in less than 24 hours. The temperature was too high for any snowfall in the coast range.

San Joaquin Valley.—Cloudy weather prevailed throughout the week with rain on four days. All of the tributaries of the San Joaquin are running bank full and considerable damage has been done in places by the high waters. In the vicinity of Sonora county, bridges, railway trestles and roads have been washed away. In many parts of the valley creeks and rivers are out of their banks. Breaks in the ditches and canals are numerous. At San Joaquin bridge a river stage of 18.5 feet occurred on Sunday night. This is the highest water recorded at this point.

Southern California.—Stormy weather prevailed throughout the week, with heavy rains on Wednesday, Thursday, Friday and Saturday. High winds were reported on Saturday; and at San Diego a maximum wind velocity of 28 miles per hour from the south occurred. Thunderstorms were reported at San Luis Obispo Saturday afternoon. The rainfall during the latter part of the week was very heavy in all portions of the south. At San Diego up to the close of the week the seasonal rainfall was nearly two inches in excess of the normal. As shown in the table of seasonal rainfalls the water supply is abundant. The week closes with unsettled weather and showers still prevailing.

SILK-GROWING IN CALIFORNIA

Continued from first page.)

California has an advantage over all other countries in silk raising, because of her fertile soil, and her mild climate, where no rain or electric storms come during the long summer months.

Will silk raising pay? is a question that I have been subjected to. It will pay better than any other industry, depending upon how familiar we are with the industry, and will pay still better when we can supply our own market.

Previous experiments with silk raising have been tried in several places, thirty or forty years ago, when the gold fever was too strong for any one to bow down to feed silk worms as an industry. About that time the State passed a law giving a bounty to foster the planting of mulberry trees and speculators planted thousands of worthless trees. The bounty was withdrawn, as at that time silk was not in demand as it is today. We must have patience as there is no product which pays a big dividend to begin with, but it will richly reward us in the future for our efforts expended in pioneer days.

MULBERRIES FOR SILK CULTURE.

As the silk worm industry is progressing there are calls for the leaves of the mulberry on which to feed the worms. The mulberry used is the common white, Morus alba, but no doubt the Russian and Japonica are as good for the purpose, as both are supposedly but varieties of Morus alba. Continual picking of the leaves weakens trees greatly, hence the desirability of having two sets, one set to be allowed to grow at will every other year. And if some time before spring the bushes were severely pruned the young shoots which would follow would give large, luxuriant leaves.

Mulberry seedlings are best raised when seeds are sown very soon after they ripen. They should be washed free of pulp and sown in the Fall. But if kept from becoming too dry through the winter they may be sown in early spring and fair success will follow.

Osage orange belongs to the same natural order as the mulberry and can have its leaves fed to silk worms, but the silk is reported not as good as from the results of mulberry feedings. The paper mulberry and the fig are in the same order of trees as the common mulberry.

Water the horse reguarly, either before feeding, or an hour after.

THE YEAST TREATMENT.

Again inquiries come for the republication of the yeast treatment for barrenness, which we have printed several times. It is as follows:

Take an ordinary two-cent cake of yeast and make it into a paste with a little warm water. Allow this to remain in a moderately warm place for 12 hours, then add one pint of lukewarm, freshly boiled water, mix and allow to stand for another 12 hours. Prepare this mixture 24 hours ahead of the time the cow is expected to come in heat and inject it into her vagina the moment she is seen to be in heat. Breed her just when she is going out of heat.

The comment of our veterinary editor on the foregoing was as follows:

"The theory upon which the use of this mixture is based is that the usual cause of barrenness is bacteria of some sort or another and that they give rise to an acid condition of the secretions of the generative organs which is destructive to the female ova and male spermatozoa. The yeast fungi (Saccharomyces) when introduced as suggested are supposed to invade every part of the cow's generative organs, destroy all bacterial life and incidentally neutralize the acid condition referred to. We understand that to Dr. Peters of the Nebraska Experiment Station belongs the credit of having discovered the first intimation of this method of treatment in a French medical book or journal. It is to be hoped that it will prove a success and readers are requested to give it a thorough trial and report results."

Recently in reply to inquiries Dr. Alexander has stated that the fluid yeast ordinarily kept in the household will answer instead of the yeast cake, using about the same amount as is required for an ordinary baking. He invites reports of results obtained by this treatment, which is in its experimental stage.—Breeders' Gazette.

A table compiled by the State Department of Highways shows that the annual tax rate for road purposes levied by the Supervisors of the different counties varies from 24 cents on $100, in Kern and Mono counties, to 60 cents in San Diego and Los Angeles, the most common rates being 35 and 40 cents. The amount to be raised for road purposes in the State for the fiscal year ending June 30th aggregated $2.540.019. This is in addition to all expenditures by the State itself for the support of the Department of Highways and the construction of "State Roads." The largest amount raised by any one county is $281,790 by Los Angeles county, and the smallest $5664. by Inyo county.

IT'S PENNY WISE

Policy to set out a good tree, costing good money and then let the sun burn the bark, or the rabbits gnaw it when for $1.00 an acre you can get Yucca Tree Protectors that are practically indestructible. Write for free sample of the wrap. Yucca Mfg. Co., 2124 Willow St., Los Angeles.

Molasses now on sale. Introductory price $1.00 a barrel. Los Alamitos Sugar Company.

The Bolton Electric Automatic Alarm Thermometer

Will ring a bell at any desired temperature. Same as a telephone call. For prices and particulars address

Electric Alarm Thermometer Co.
Fresno. Cal.

Sinaloa Lands

FOR ALMOST NOTHING

Why pay excessive prices for California lands, when fertile Sinaloa [Mexico] acres are purchasable at $2 to $20 an acre? Everything grows; profitable markets; six railroads building; marine activity; ten deep rivers. Greatest opportunities for small capital since early California days. Call or write for information.

SINALOA LAND CO.,
217-220 Conservative Ins. Bldg. Los Angeles, Cal.

AUCTION

75 Cows and Heifers, 4 Horses, 2 Mules, 40 Hogs

Thursday, April 5

At 10 A. M.

On Gwynn Ranch, 2 Miles West of Foot of
CAHUENGA PASS
On Ventura County Road, 5 Miles Northwest of Hollywood, in San Fernando Valley.

25 Head of good Milk Cows, mostly Jerseys, fresh and coming fresh, in good condition, rich milkers.

10 Head Steers coming 2 years old.

25 Head 2-year old Heifers, Durham-Jerseys, coming fresh. 20 Head Yearling Heifers, Durham-Jerseys. 1 Fine Durham Bull.

2 Work Horses, 2 Work Mules, 1 2-year-old Iron Gray Draft Colt. 1 3-year-old Iron Gray Mare Colt.

40 Head Brood Sows and Shoats in Fine Condition.

50 Tons Oat and Barley Hay, baled, Farm Implements, etc. I am absolutely quitting the dairy business and everything will positively be sold to the highest bidder without reserve.

TERMS—9 months time will be given with note and approved security. Liberal discount for cash. FREE LUNCH AT NOON.

A. J. Gwynn, Owner

Rhoades, Reed & Rhoades, Aucrs.
Office, 730 So. Spring St., Los Angeles.

SAVE ALL YOUR CREAM

A hired man who doesn't milk your cows dry every milking is pretty poor dairy help at **any price.** Isn't that so? And in the same way a cream separator that leaves part of the cream in the milk every skimming is expensive, no matter what you pay for it. The improved

U. S. CREAM SEPARATOR

Holder of World's Record for clean skimming

takes out more cream than any other separator. This is due to the exclusive construction of its skimming device. We want to show you about this, and prove that what we say is true. The best way to do it is to have you see one of our big, handsome free catalogues. Just write us a postal and we'll send you one by return mail. Better do it now while you think of it.

VERMONT FARM MACHINE CO., BELLOWS FALLS, VERMONT

Eighteen centrally located distributing warehouses throughout the U. S. and Canada

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Prompt Delivery Assured California customers from San Francisco warehouse No delays. Address all letters to Bellows Falls, Vt

Queries and Replies

REDWOOD SHAVINGS.

Editor Cultivator: Permit me to take issue with your reply to the query relative to the use of Redwood shavings, in the Cultivator of March 2nd. I have found Redwood, if fresh, poisonous to a very high degree to all tender seedlings. When I first came to California, some twenty years ago, I used fresh Redwood boards to make a flat for growing young plants and just as soon as the roots reached through to the wood the plants died. At the same time a few flats were made from boxes procured from the grocer and no trouble was found in growing perfectly healthy plants. At this time we had boarding in our family the district school teacher. This lady had taught in former years in the northern part of the State and she informed me that the owner of a lumber mill placed his mill over a stream in order to get rid of the sawdust and that the fish in that stream were killed by thousands.

People below the mill protested, and the matter went into court with the result that the mill owner was forced to get rid if the sawdust some other way. Most of us know how unfit for use is water that is first put into a fresh Redwood tank.

I have no doubt that sawdust that has been exposed to the elements for a couple of years would be ideal for seedlings. When a boy I used spent tan bark for the same purpose with perfect success, but I was careful to secure it from the pile that had lain out in the weather for several years, whereas if I had used it fresh the tannic acid would have worked utter destruction.

I know that the acid in fresh Redwood is poison to both animal and plant life and I hold the teaching of the Cultivator in such high esteem that I should be very sorry to have passed along a statement so erroneous, without entering a protest. Yours truly—Q. A. Lobingier.

The manager of the Southern California Acclimatizing Association at Santa Barbara, in answer to an inquiry, has the following to say, "This firm uses many tons each year of Redwood and pine sawdust and shavings.

"My first impression that shavings would be good for potting soil was through the observance that potted plants plunged in sawdust or shavings and 'rooted through' were in unusually fine condition and that the roots were long and fibrous and thoroughly mixed with the shavings. This impressed me to try a little in my potting compost and as there was no ill effect, I added more and more, until at last, in some cases, I used all sifted shavings. For two years, and more I have used at least half sifted shavings and never have our plants done better. No other soil holds moisture so well, and as for seed growing, I have never found anything to compare with it, the tenderest seeds doing better than in any other medium, and that is saying much. I have never found any injury from either pine or Redwood dust or shavings though I have used both fresh from the mill. They would make a fine top covering for new lawns and for mulching flower beds to conserve the moisture I have found no equal."

In California there exists a very general but erroneous impression that Redwood sawdust and shavings are injurious to plant life. This is due in part to the fact that soil coming in contact with Redwood for the first time will be discolored by the small and insignificant amount of tannic acid contained therein. The writer has used thousands of fresh Redwood seed boxes and never experienced the trouble noted by Mr. Lobingier. It may be that in certain waters the chemical properties in the two may produce an injurious effect, but through nearly a score of years in the nursery and garden trade the writer has never experienced a case of injury. Mr. Lobingier is a man of broad experience and high intelligence and there is no doubt that in the cases he mentions, the facts are as stated. We understand Mr. Wuest of Alhambra had similar experience with Redwood shavings around orange trees. "When doctors disagree who shall decide?"—Ernest Braunton.

AIR COMPRESSOR.

A subscriber from Santa Paula writes:

Will you please give me some information as to the practicability of the air compressor for raising water from a deep well for irrigation purposes? Also information as to its cost, and probable cost of operating it? My well, now being drilled, will probably be 250 feet deep, with water standing 75 or 100 feet from the top of casing."

When your well is developed some information may be given in answer to your questions. We can not give definite data or indefinite suggestions.

STUNTED EUCALYPTUS.

Editor Cultivator: I inclose a red gum tree and wish to know what is the matter with it. Myself and neighbor bought several hundred from a nursery and when they arrived we found them more or less covered with knots and we want to know if they are to be considered in a healthy state for planting?—G. C., Heber.

Eucalyptus show no disease but seem badly stunted. Trees of this height should have single stem and more slender; roots should be many and small, not club-rooted like the specimens sent. They ill probably all grow but are not first-class stock.

MILDEW.

Editor Cultivator: Will you please through your valuable columns tell what is the cause and what can be done for the peas I send by separate cover?—O. K., Orange.

Your peas are badly affected with mildew and in such a stage and when the vines are so old we do not think any remedial treatment will pay. We have lately had so much damp, cloudy weather that mildew is very prevalent on all sorts of vegetation.

VACCINATION FOR BLACKLEG.

Editor Cultivator: How many times is it necessary to vaccinate calves for blackleg? Is it necessary to vaccinate an animal after having the first calf?—C. B., Imperial, Calif.

Assuredly, we vaccinate calves twice about three weeks between vaccination. If the vaccination takes it is not necessary to renew the operation.

RUSH GROWING.

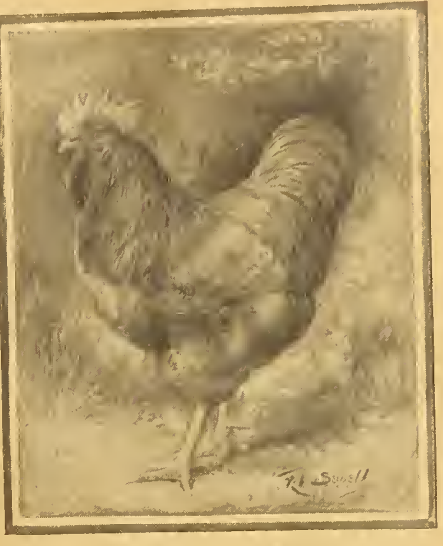
Editor Cultivator: An article appeared in the Cultivator of March 16th, on the Juncus rush; could you give more information in your next issue, regarding the price, market, etc., and how could I get the roots?—H. R. H., Forestville.

Write to Agricultural Experiment Station, Berkeley.

A GOOD FENCE.

The practical man, who wishes the latest improved and one of the most practical fences on the market will get good ideas by dropping a card o the West Coast Wire & Iron Works, 19 Fremont street. San Francisco, asking for the little booklet, "Woven Wire Fencings," "Wire Supplies for the Farm" is a slogan of the West Coast People, and they certainly put up a good fence and one which is worth investigating. Stock fence of barbwire, or netting mesh, or twisted ribbon, and they also put up a number of ornamental designs for yards and parks which are listed in the booklet spoken of.

A PRIZE WINNER AT MADISON SQUARE.



This beautiful Buff Orpington, an aristocrat of aristocrats, was a prize winner at Madison Square, New York. He won first there in 1903, and is now mated with the first pullet of the same show in 1904. Both birds are the property of Willow Brook Farm, Berlin, Conn.

The Lake Avenue Poultry Yards advertise high grade poultry in this issue. Mr. Harrison makes a specialty of several fine breeds.

O. M. Johnson of Gardena, is advertising eggs for hatching from standard bred White Plymouth Rocks.

Mrs. J. R. Cutting of Monrovia, advertises eggs for hatching from several fine strains this week.

Portable Buildings

Made in all sizes and for all purposes. Cut shows No. 48, 4-Room House, size 12 feet 4 5 8 inches wide, 24 feet 4 5 8 inches long, height of walls 7. 8 or 9 feet.

Send for Our Catalogue, which gives photographs, prices and weights of other buildings.

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Household Department

SONGS 'O CHEER.

My Grampa he's a'allus sayin' "Sing a song o' cheer!"
And, onc't I says "What kind is them? he says, "The kind to hear—
'Cause they're the kind that Nature sings, in every bird that twitters."
"Well, whippcrwills and doves," says I "hain't over-cheery critters!"
"Then don't you sing like them," he says—"ner guiny-hens, my dear,
Ner peafowls nuther, (drat the boy!) You sing a song of cheer!"
I ean't sing nothin' anyhow; but comin' home, to'rds night,
I kindo'-sorto' kep' a whistlin' "Old—Bob—White!"

—James Whiteomb Riley.

Their First Quarrel.

"I'm not sure that Arthur and I are engaged any more," said Louise. "That's the reason I'm not wearing my ring, since you have had the goodness to ask."

"Well, I didn't intend to make you mad by asking," returned her friend, stiffly. "I suppose you'd resent it if I were to inquire what you and Arthur quarreled about?"

"Why, of course I wouldn't. Don't be horrid, dear. I'm not mad—I'm just provoked at Arthur, and I'll gladly tell you all about it.

"You know Arthur went abroad last summer on business. He kept a diary of his trip, and illustrated it with the prettiest little photographs that he took himself. Really, I never read a novel that was more interesting than that book. Arthur has such a remarkable sense of humor that he see the funny side of everything, and he has the drollest way of describing scenery and incidents.

"I don't suppose he would have written the diary if his mother hadn't asked him to. He intended to have it handsomely bound and give it to her for a Christmas present. But, of course, he brought it to me first, and I read every word of it.

"A few evenings before Christmas Arthur was at the house as usual, and just as he was leaving he asked me for the diary. I ran to another room to get it and was astonished that it wasn't where I thought I'd left it. I hated to say that it was mislaid, so I asked him if I could keep it a day longer. He smiled and said 'certainly.' I thought I would have no trouble finding it the next day, but I searched high and low for it without sueeess. That evening I was so afraid that Arthur would ask for the book that I could searcely talk to him sensibly. I couldn't bear to have him think that I'd been careless with it. But he didn't mention it, and I began another search the minute he was gone. I couldn't find it. He ran in the next morning on his way down town and said he had stopped for the diary.

"O don't take it away today. I want to show it to a friend.

"Why, you think a great deal of it, don't you?" he said, laughingly, as he ran down the steps.

"You can imagine that I was nearly distracted, for it was mortifying to think that I should have to eonfess that I had lost a book which could never be replaced. I determined to find it at any cost. I simply turned the house upside down. I looked in the most improbable places—under the beds, on the pantry shelves and in the refrigerator. But it wasn't to be found. Mother had been away for a week, and she was coming home the next day. I decided to tell her my trouble and get her to help me hunt. So when Arthur eame that evening I tried to assume a nonchalant air, and said in an offhand way, 'Oh, about your diary; I'd rather not return it till mother comes, for she may wish to see it again.'

"Arthur gave me such a long quizzical glance that I could'nt keep the eolor from rushing into my face.

"Don't romance any more, you dear little goose," he said, "for the book has been at the binders for more than a week. I came in one day when you weren't at home, and as I saw it on the table I slipped it into my pocket."

"Oh, Arthur!" I eried, "How eould you be so mean?"

"Why, I didn't intend to be mean," he said. "I was going to tell you when I asked you for it the first time, just for fun. But you were so clever in inventing reasons for keeping it that I thought it would be a good joke to keep you in the dark for a while."

"I think you are perfectly horrid," I said. "I've been so worried about it that I could hardly sleep. If you really cared for me you wouldn't treat me so. It was cruel of you to deceive me."

"Deceive me," he repeated laughing, "Why, Louise, you are the little deceiver."

"Then he actually roared. He seemed to think the incident very funny. It's not my idea of a joke and I told him so, very plainly."

"I suppose you haven't seen him since?" asked her friend.

"Well, no; you see that was only last night," returned Louise. "And do you know, I've a notion to forgive him."—Press Review.

A MOTHER'S DUTY A MOTHER'S PLEASURE.

Mothers who have entrusted to their care beings the most precious of the world's treasures, sent from the courts of Paradise to bless and cheer, what duty more clear, more soul inspiring, than the preparation of these same beings for lives of usefulness and honor.

This is the most sacred charge that has ever been committed to the care of mortals, and a blessing so rich, so glorious that all thus honored may well rejoice with exceeding gladness at being accounted worthy of this the greatest of all privileges.

Every true mother cannot but feel that a great responsibility rests upon her as the guardian of these lives, so graciously bound by the Infinite, for purpose so high and holy that we can hardly conceive of the grandeur of her heaven-born mission.

Would that all who have been accounted worthy of this divine appointed task might most keenly feel the duty they owe as moulders and builders of the destiny of a people who stand high among the nations of the world, all as a result of the high-born courage and gracious loveliness of generations of faithful mothers agone.

"The hand that rocks the cradle rules the world."

As my own conception, the first and highest duty of every devoted mother is the preparation of her child for a life which will bless and make better this present world and at last stand in the courts of eternity redeemed and purified by the influence of a saintly mother, who gently and tenderly guided through the power of a Being who will give to all wisdom sufficient for the duties committed in love and tenderness.

Those mothers are most happy who regard their duty toward their children as a joy and pleasure, and their influenee is immeasurable, incomparable and everlasting.

Would that mine were the ability to inspire every mother with a true estimate of her own greatness. To me a duty-loving, and a duty-performing mother is a creation most noble and worthy of the greatest esteem and reverence.

In ancient Greece no woman of the realm was treated with such eourtesy and gentle deference as the prospective mother. The result of this genteel demeanor is well known to students of history. In this respeet we might well emulate the ancients.

One very practical plan and one which brings results, is to treat a child with the same deference and politeness as you would an older person. This will add to his dignity and self-respect, two very essential qualities in the building of character, which is ever the highest aim.

It is never wise to deal untruthfully with children, as is so often and so thoughtlessly done. Rewards and punishments promised should be meted out with promptness and candor.

To discuss business difficulties in the presence of children is to add to them sorrow and trouble from which they should remain care free. A dear little girl of nine whom I knew poured into my ear such a tale of direful calamities as would have done justice to one of maturity. These had been so woven into her sensitive soul that her grief was deplorable.

It is well to encourage the use of correct English from earliest childhood. This may be most successfully done by great care in examples and by very gently setting forth of a correct for an incorrect expression. It takes great tact and sweetness to overcome outside influence in this particular.

As the presiding genius of the home the mother should be a queen of loveliness in all womanly virtue. And thus equipped her children should go forth as everlasting evidence of her fitness for a position so divinely imposed.

A mother's duty is a mother's pleasure,
And childhood dear her supremest treasure."

—Mrs. W. A. Preston, Imperial.

A FATHER'S FRIENDSHIP.

"There lies the best friend I ever had, except you, mother," I heard a young man say once as he stood by his mother's side and gazed for the last time at the noble faee of his father as it lay calm and beautiful in death. That is exactly what every father ought to be to his boy—his best friend; but somehow it is not uncommon for that beautiful thing called friendship to fail between father and son. The father loves the boy, he spends his life in working for him; he feeds him, clothes him, provides him a beautiful house to live in, gives him every advantage in the way of edueation, and yet, in spite of all this lavish kindness in material things, there is something wrong in the relation between them. They are really strangers to each other It seems as if a solid wall had been built between two hearts, a wall which is none the less strong because it is invisible. The son is stiff, constrained, unhappy in his father's presence, and the father feels hurt at the boy's coldness and ingratitude. But, my dear sir, how do you suppose your son feels at your apparent indifference toward him? The fact that you provide all these material things does not affeet him. They are like air and water; he has always had them. One gentle touch on the shoulder would mean more to him than all the luxury by which he is surrounded. He does not dream you love him, because you never turn the genial, friendly side of your nature toward him. You are out of touch with him completely, and this separation is your fault, not his; for a child turns instinctively toward a father's heart, and only when he is shut out of it does he go away.

This wall is of your building. You began it when he was a little fellow, and you just told him to "run away, papa is busy." That was the first stone in the pile. By and by he eeased to come to you with his little life's unfoldings, because at night you were tired and wanted to be quiet, and in the morning you were busy with your plans for the day. He felt he was not welcome. So now you see him a big strong fellow, almost as tall as yourself, going in and out daily before you, eating at the same table, kneeling, perhaps by your side at family prayers, and yet what goes on in that boy's heart and soul you cannot tell. He will not show you because he thinks—and he has good reason to think—you do not care.

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Miss Alcott pictures such a case as this in one of her books very vividly, but fortunately in that instance the separation was not lifelong. There came a failure—all the family fortune was swept away, and the shock and surprise of that time enabled the son to get over the barrier and find his way into his father's heart. As the lad himself expressed it, it seemed as if the failure had come on purpose to father.

If a father influences a son's character he must have a sympathetic knowledge of what the boys cares for most. He must be in the boy's confidence. One of the easiest ways to win that is to be interested in his amusements. The father who will go swimming or skating, who will play a game of marbles or fly a kite with his boy can gain an insight into his nature, and he has a wonderful hold on him. The two are sure to be friends, for nothing charms a boy so much as to have his father for a companion in his pleasures.—Selected.

WISHING DISHES.

Dish washing is usually considered a disagreeable task, although it would not be any easy task to account for the aversion to it. It is not sloppy, dirty work unless one is careless, and the hands need not be roughened by it. Scrape all the crumbs from the plates into a bowl, and empty them into the slop pail. Do not pile the dishes up indiscriminately, but put all of one kind together. There should be a clean dish cloth or mop, and at least two dry towels. These may be of linen crash or flour sacks that have been washed and hemmed. Have plenty of hot water, fill the dish pan half full, and dissolve enough Pearline in it to make a suds. Wash the glassware first, rinse in hot water and dry quickly. They will be clear and beautifully polished. After this comes the silverware, cups, saucers and plates in order named. The cooking utensils should be filled with water as soon as the food is removed from them, and allowed to soak until you ar ready to wash them. Then a wire dish cloth is useful for cleaning kettles if the food has stuck to them. Clean tarnished silver with whiting mixed to a paste with equal parts of ammonia and water, using a flannel cloth, and polishing after it has dried. —E. J. C.

AN HONEST MAN.

Cassius R. Peck, assistant United States District Attorney of Oklahoma, will never accept a railroad pass. Those that are sent to him are always returned.

At a banquet in Guthrie Mr. Peck spoke on honesty. One thing he said was this:

"What are we coming to? Are we coming to such a pass that our ideas of an honest man will correspond with the idea of old Hiram Stroode?

"Hiram Stroode, for the seventh time, was about to fail. He called in an expert accountant to disentangle his books. The accountant, after two days' work, announced to Hiram that he would be able to pay his creditors four cents on the dollar.

"At this news the old man looked vexed.

"Heretofore," he said frowning, "I have always paid ten cents on the dollar."

"A virtuous and benevolent expression spread over his face.

"And will do so now," he resumed. "I will make up the difference out of my own pocket."

Cookery Recipes

CRANBERRY ICE CREAM.

Cook one pound of cranberries, six ounces of sugar and a few drops of carmine to a pulp in one-half pint of water, strain and add to one pint of base cream and freeze.

* * *

MARMALADE ICE CREAM.

Either lemon or orange. Mix one-half pint marmalade with one pint of cream and add the juice of two oranges or lemons or orange syrup and strain and freeze.

* * *

ORANGE WINE AND VINEGAR.

Mrs. W. of Pomona, asks the Cultivator for a formula for making orange wine and orange vinegar. Orange wine is made much as elderberry wine. The pulp is strained out; the juice sweetened, bottled and set away. It is treated as elderberry wine is, but not always with the same result. We know of no specific rule to make orange wine by and guarantee none. An old orange marmalade maker says orange wine isn't much of a success.

* * *

BAKED BEANS.

The New England cook bakes her jar of beans every Saturday and serves them for Sunday morning breakfast, and likely again for dinner, or else for an evening lunch. All families may not care for them at this time, but as a rule beans may be served once a week during cold weather without becoming tiresome. Institutions, boarding houses, and those who get up church suppers find baked beans a cheap and satisfying food.

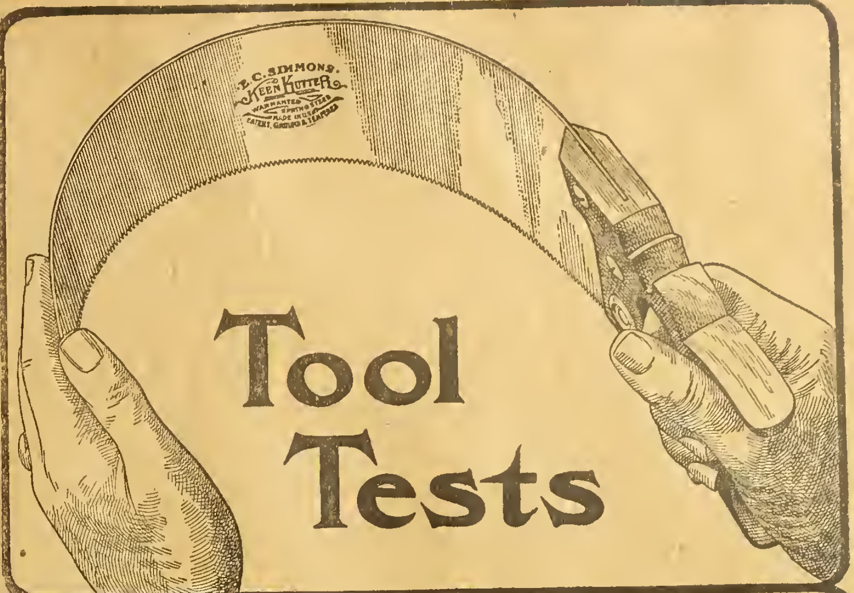
Beans contain a large per cent. of nutriment, and when cooked with salt pork or corned beef, they form what is termed a complete food, that is, one that contains all the elements necessary to sustain life. Where beans are commonly used it is perhaps a good plan to prepare them in several ways.

Beans are baked without pork for the vegetarian and can be seasoned so that the uniniated would not dream of the omission of the cube of salt pork. To cook the beans properly without pork, bury the heart of an onion in the bottom of the pot, dissolve a little molasses, a speck of mustard, salt and a few grains of cayenne in two cups of boiling water and pour over the beans after they have been soaked over night, drained and parboiled in fresh water and drained again. Half a level teaspoon of soda added to beans enough to fill a two-quart pot will improve them if put in when they are nearly parboiled. Put two rounding tablespoons of butter cut into several pieces on top of the beans, cover closely and bake six hours, adding a little boiling water as needed. Just at the last uncover and cook until nearly dry; never stir the beans.

Unless porkless beans are well seasoned they are not palatable. If pork is added score the top with a sharp knife and bury in the beans, let brown and cook crisp by uncovering the pot during the last hour of cooking. Use one-quarter pound of pork to each pint of dry beans. Small pea beans are preferred by most cooks for baking rather than the larger kind of white beans and occasionally for a change the red kidney beans are good. Serve with brown bread.

If the modern addition of tomato sauce is liked add one cup to the beans when the beans are about half cooked. Catsup may be served with beans but never use vinegar for it hardens the vegetable protein and make it less digestible.

In her interesting paper on "A Mother's Duty," Mrs. W. A. Preston tells many things of value to parents. Among all of those we opine, none are more worthy of mention than the admonition not to burden the soul of childhood with our woes. No matter what difficulties may beset grown people, what sorrows may be theirs, keep the fact from the children. Remember they are coming, full fast, to the age of care and trouble, and now that they are in the sunshine of childhood's loveliest hours, do nothing to mar their happiness.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Dallas, Houston and Fort Worth			25.00
Nearly all points in Kansas, Oklahoma and Indian Territory			25.00

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A LONG JOURNEY.

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Abundant evidence of the variety of buildings in all parts of the world covered by Rex Flintkote Roofing, may be obtained by sending a postal card to the manufacturers, J. A. & W. Bird & Company, Boston, Mass., which will bring full particulars, illustrative photographs and samples.

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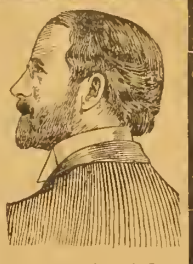

I CURE
Fistula, Piles, Itching Piles, Fissures, Ulcers, Constipation
without Pain or the Knife

Over 20 years experience. Office hours from 10 a.m. to 4 p.m. Sundays by appointment. If possible, call on me for consultation. If not, write today for my **FREE BOOK**—"Rectal and Intestinal Diseases; Their Cause and Cure."

F. R. Weston, M. D.

FRANK R. WESTON, M. D.
Suite 501-502 Donohoe Building
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VULCANITE
ROOFING

JUST THE THING ALL THE YEAR ROUND

Non-conductive of heat and cold. Does not buckle—lays perfectly smooth. A material which is at once light, strong, durable and cheap, and at the same time water-proof, wind-proof, acid and fume-proof. Also used for covering outside of buildings, floors of warehouses, offices, etc. Requires no paint; is permanent and inexpensive. Comes in various weights.

Samples and price list upon application.

C. SCHEERER & CO.
255 S. LOS ANGELES ST.
LOS ANGELES, CAL.

Nearly all of the poultrymen on the Pacific Coast, have noticed the attractive advertising being done by the Acme Mills Co., of Portland, Oregon. It is rather interesting to know how the Acme Mills Co., got started in the Poultry Feed Business.

The Ralston Purina Co., of St. Louis, Mo., are the Eastern manufacturers of the great Ralston Health Foods and some years ago they made arrangements with the Acme Mills Co., of Portland, Oregon, to manufacture these same goods for the Pacific Coast. About a year ago the Ralston Purina Co., saw a chance to put on the market something new in the way of feed for chickens and after a great deal of experimenting, they decided upon the formulas which have since given them this enormous business.

In view of the fact that the Acme Mills Co., have two of the largest rolled oat mills on the Pacific Coast, they were most admirably situated to take up this line of business. Any one familiar with a rolled oat plant, knows that in the milling of oats, there is a large amount of the oat groats which are bound to break up in the rolling process. These broken oat groats are just as good as the whole oat groats which are used to make rolled oats for the breakfast table. But owing to their smallness in size and uneven grade, the oat miller seldom uses them in making the best grade of rolled oats. Heretofore the Acme Mills Co., has always sold this product to people who are raising chickens, for these tender, little broken groats are just the thing for the baby chicks and in addition to the broken groats their daily output of oat middlings and oat shorts has been very large and a most valuable product for the chicken man.

With four mills located in the Pacific northwest, this company has an opportunity to draw from almost every grain growing district on the Pacific Coast, and in order to take care of their poultry feed business, they have built an entirely separate plant, which started to run October 15th and which has been running continuously day and night every since.

Guy H. Miller of Riverside, has sold the fine bull he was advertising in this paper to a subscriber in San Diego county and is now offering some other fine stock for sale.

The Produce Markets

Los Angeles Markets.

Los Angeles, March 29, 1906.

Butter remains unchanged, but a slump may be expected at any time, as heavy receipts are expected shortly.

Eggs are down one cent, but are likely to again advance as the continued wet weather has curtailed the supply. Poultry is also scarce and quickly taken.

Vegetables are rather more plentiful, but are quickly taken by consumers.

Butter.

B. of T. Creamery, per roll	.50
Valley Creamery, fancy	.50
Valley Storage	.47½@50

Cheese.

Cal. 3-lb. hand	.17½
Cal. Young America	.16½
California Anchor	.15½
Northern	.16@17
Domestic Swiss	.19@20
Imported do	.26½@27

Eggs.

Eggs, Fresh Ranch	.18

Poultry.

Fryers, 2 1-2 lbs	.18@19
Broilers, under 2 lbs., per lb.	.19@21
Young Roosters. per lb.,	.16@17
Hens. per lb.	.14
Ducks, per lb.	.14@15
Geese	.14@15
Turkeys	.19

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock:

Hogs, 200 lbs.	.6
Prime Steers	.4½
Cows	.3¼
Calves, per lb	.5
Sheep, ewes, per head	.4.50
Wethers	.5.00

Potatoes.

Northern, per sack	.1.75@1.90
Locals, per cwt	.1.10@1.25
Locals, new, per box	.2.25
Sweets, white, per cwt	.2.40@2.50
Sweets, y llow, cwt.	.2.00

Vegetables.

Onions, Aust. Brown, cwt.	.1.50@1.75
Onions, yellow, cwt	.1.75
Garlic	.7@10
Cabbage, per sack	.1.00@1.10
Cauliflower, per doz	.40@60
Asparagus	.8@9
Lettuce, per dozen	.20@30
Bell Peppers	.18@20
Chili, Green	.20@25
Cucumbers, per doz	.60@2.00
Radishes, per doz	.15
Lima Beans	.10@15
String Beans	.15@17
Beets	.40
Green Onions, doz. bunches	.20@25
Carrots, doz. bunches	.40
Turnips, doz. bunches	.30@40
Celery, per doz	.45@50
Peas, per lb	.5@6
Oyster Plant	.40
Tomatoes, local	.1.50@2.05
Parsley, per. doz. bunches	.60
Pie Pumpkin, per lb.	.01

Citrus Fruits.

Lemons, standard	.75@1.00
Lemons, choice	.1.00@1.25
Lemons, fancy	.1.75@1.85
Grapefruit	.1.75@3.00
Navels, extra fancy	.2.00
Navels, choice	.1.40@1.60

Fresh Fruits.

Strawberries, per box	.25
Guavas, per box	.3½@4
Pear, Winter Nelis, per lb	.4½@5

Dried Fruit.

Apples, evaporated, ex ch, 9; ch, 8½.

Apricots, ex ch. 11; fy, 8½; ch, 7½.

Peaches, fy, 10½; ch, 9.

Santa Clara Prunes, 30-40, 8½. 40-50. 7½. 50-60. 7; 60-70. 6½.

Loose Muscatel Raisins, 2-crown 4½; 3-crown, 5; 4-crown, 6.

Beans, Dried.

Limas	.5.00@5.50
Pinks, fancy	.2.50@2.65
Lady Washington	.3.00@3.10
Small White	.3.50@3.75
Black Eyes	.5.50@6.00

Honey.

Honey, comb frames	.14½@15
White, strained, per lb	.6½@7
Light Amber	.6
Amber	5
Beeswax	.27

Hay.

Barley, No. 1	.14.00@15.00
Alfalfa, local	.13@13.50
Alfalfa, Northern	.11@12.50
Wheat, No. 1	.13.50@14.50
Tame Oat	.11@18.50

Grain.

Selling prices of mill stuffs f. o. b. cars L. A., in quantity, are:

Rolled Barley	.1.40
Bran	.1.25
Feed Corn Meal	.1.45
Shorts	.1.45
Wheat, per cwt	.1.60
Cracked Corn	.1.40
Oil Cake Meal	.2.25
Cocoanut Meal	.1.55

San Francisco Markets.

San Francisco. March 28, 1906.

Butter.

Butter receipts have been liberal and prices have dropped from two to three cents over last quotations.

Fresh California extras	.20
Fresh California, firsts	.22
Fresh California, seconds	.18

Cheese.

Cheese has also taken a slump and is down from one to two cents.

California, new	.11½
California, firsts	.10½
California seconds	.11
Eastern Cheddars	.16
Storage, California	.14
Storage, eastern	.16

Eggs.

Eggs are also lower, but the demand is good.

Eggs, fresh ranch)	.10¼
Firsts	.16½
Storage, Eastern	.14

Poultry.

Old Roosters, per doz.	.4.50@5.50
Young Roosters, per doz.	.6.00@7.50
Hens, per doz.	.5.00@7.50
Ducks, per doz.	.5.00@7.00
Turkeys, per lb.	.15@17
Geese, per pair,	.2.00@2.50

Live Stock.

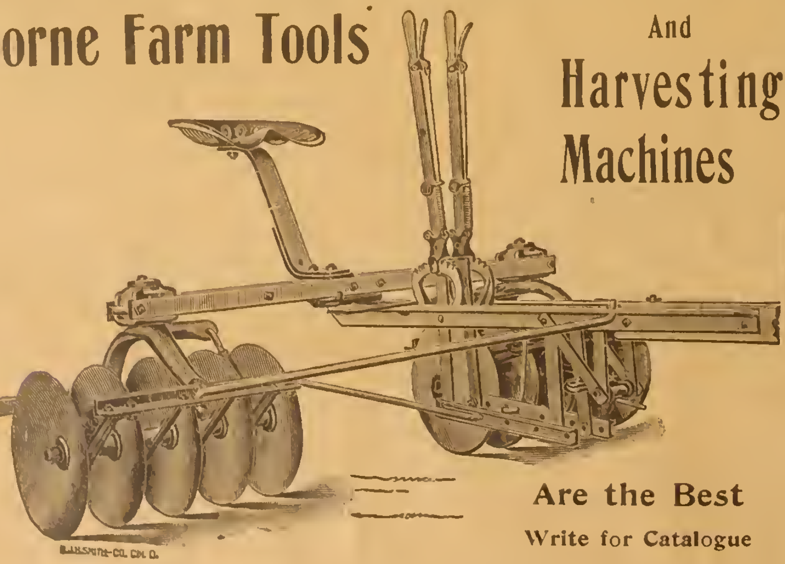
Hogs, per lb., 80 to 130 lbs.	.7
Hogs, per lb., to 250 lbs.	.7¼
Hogs. pr lb., 250 to 350 lbs.	.6¾
Hogs, per lb., rough heavy	.5
Prime Steers, lb	.8½
Prime Steers, lb	.8
Cows, per lb.	.6½
Calves, lb.	.5@5½
Sheep, ewes, per lb.	.4½@5
Lambs, per lb	.5@7
Wethers, per lb.	.5@5½

Potatoes.

River Burbanks	.40@75
Oregon Burbanks	.75@1.05
Salinas Burbanks	.1.00@1.50
Sweets, Merced	.75@1.25

Vegetables.

Asparagus	.6
Rhubarb, per box	.65@85
Onions, Oregon, per sack	.1.00@1.50
Onions, Australian	.3.50
Bell Peppers, green	.25
Cucumbers, per doz.	.75@1.00
Tomatoes, per box	.1.25@1.75
String Beans	.15
Wax Beans	.12



Osborne Farm Tools
And Harvesting Machines
Are the Best
Write for Catalogue
PACIFIC IMPLEMENT COMPANY
133 to153 Kansas Street
San Francisco, Cal.

Summer Squash, per box	1.25
Green Peas, per lb.	5@10

Citrus Fruits.

Navels, fancy	2.50@3.50
Seedlings	1.50@1.75
Lemons, standard	1.00@3.00
Grapefruit	1.50@2.75
Tangerines	1.50@1.75

Fresh Fruits.

Apples are in good demand with prices a trifle higher.

Apples, per box, extra	1.75@2.25
Apples, fancy	1.25@1.65

Beans, Dried.

Beans have also taken a slightly higher price.

Limas	4.60
Pinks	1.90@2.90
Small Whites	3.15@3.25
Black Eyes	4.40@4.50
Bayos	3.40@3.50
Red Kidney	3.50@3.75
Horse eBans	1.50@1.75

Hay.

Barley, new	$8.00@11.00
Alfalfa	11.00@12.50
Wheat	11.00@16.00
Oats	8.50@12.50

Grain.

Wheat	1.65
Barley	1.35
Corn, California, New Large	1.35
Oats	1.50@1.90
Rye	1.45@1.52
Rolled Barley, per ton	25.00@26.00
Bran, per ton,	19.50@20.50
Feed Corn Meal, per ton	20.50@30.50
Middlings ½	26@30
Cracked Corn, per ton	28.50
Oil Cake Meal, per ton	37.00
Cocoanut Cake, per ton	23.00

Hops.

The price of desirable grades is nominal at 8@12½ per lb., according to quality.

CITRUS MARKETS

An unusual cold snap during the past week along the Atlantic Coast caused a temporary slump in the extreme eastern market for a few days, but the market again appears active and practically all buyers are taking their usual quantities under normal circumstances. Nearly all New York handlers who have been interviewed expressed themselves as being immensely pleased with the outlook for this season and they declare almost without exception that they expect the best year that has ever been known in the history of the business.

* * *

New York, March 27.—Twenty-three cars were sold today. The market is slightly higher.

NAVELS (iced.)

	Averages.
Independent, xf, Highland	$3.40
Independents, fy	3.25

NAVELS (vent.)

Ocean, fy, Moffat Fruit Co	3.40
Fountain, ch, Moffat Fruit Co	3.35
Santa Fe, st, Moffat Fruit Co	3.00
Fountain, ch. Moffat Fruit Co	3.10
Santa Fe, ch. Moffat Fruit Co	3.00
Rose, xf, Redlands O. G. Assn	3.40
Clover, xc, Redlands O. G. Assn.	3.20
Lion Head, xf, I. L. Lyon & Son	3.40
Tiger Head, xc, L.L. Lyon & Son	3.20
Independent, xf, Highland	3.40
Independent, fy, Highland	3.05
Blue Globe, xf, Riverside Ex	3.40
Tiger, fy, S. B. Co. Fr. Ex	3.45
Diamond, xc, San Antosio Ex	3.15
Red Globe, xc, Riv. Ex	3.10
Blue Mountain, xf, Riv. Ex	3.10
Fiesta, xc, Riverside Ex	3.05
Tropical Queen st, Moulton & G	2.35
Country Home, ch, Wilson & G.	2.70
Riverside, Riverside Ex	2.60
Camellia. xf, CCU Red. Jctn	3.10
Rough Rider, or, CCU Oroville	2.30
Heap Good, fy, Pattee & Lett	3.15
Gavilan, fy, San Jac. L. Co	3.15
Citrus Belle, ch, Ind. Ft. Co	3.10
Lucky, xc, E. E. Wilson	2.40

SEEDLINGS (iced.)

Independent, fy, Highland	2.70

THOMPSON INMPROVED NAVELS (vent.)

Carnation, xc, Moulton & G.	3.25
Gypsy Queen, xf, Moulton & G.	3.55

SEEDLINGS (vent.)

Mission Bells, xc, A. B. Chapman	2.65

LEMONS.

West Highland, fy, Cleghorn & Co	2.50
West Highland, xf, Cleghorn & Co	3.15
Flower, fy, Upland Dist	2.50
Flower, xc	2.35

NAVELENCIAS (iced.)

Magnum Bonum, J. A. Maddock.	3.25
Magnum Bonum, J. A. Maddock.	3.15

BLOODS (whole boxes. vent.)

Date Palm. ch, Pattee & Lett.	2.15
Carnation, xc, Moulton & G.	2.65

BLOODS (half boxes, vent.)

Squaw, xf, Pattee & Lett	1.40
Heap Good, fy, Pattee & Lett.	1.25
Blue Mountain, fy, Riv. Ex	1.60
Blue Globe, xf, Riverside Ex	1.35

GRAPEFRUIT (iced.)

Independent. fy, Highland	3.95
Magnum Bonum, J. A. Maddock.	2.80

GRAPEFRUIT (vent.)

Mt. Harrison, fy, F. L. Sewell	4.00
Pyramid, xc, G. R. Hand & Co.	3.60

TANGERINES.

Squaw, xf, Pattee & Lett	1.25
Lion Head, xf, L. L. Lyon & Son	2.25

ST. MICHAELS.

Rough Rider, or, CCU Oroville	2.50

BEES AND HONEY.

The white sage honey is the most palatable and finer grained and consequently the most desirable. The little bees are very consistent in gathering their supplies and all the workers from one hive will collect from the same kind of flower at the same time. At seasons of the year when water is scarce, it is not necesary to provide it for they absorb a sufficient amount from the nectar gathered.

It is not konwn that bees have any means of communication, yet they must hear and understand to a certain extent judging from their mode of life and methodical performance of duty. They show no affection whatever for one another and are utterly indifferent to a dead member excepting to drag him from the hive.

The bee family can be put into four classes—the queen, the worker,s the drone, and the fertile workers.

The queen is easily distinguished from the bees by the length of her body. She has been known to lay twice her weight in eggs in one day, which means from three to four thousand. During the season of her usefulness she is fed well by the worker bee. Deprived of a queen the workers can make a queen out of the workers cells and when several hatch, they decide which one shall live.

The worker bee is a dwarfed female bee and is produced from the fertilized eggs of the queen. Its life time is six weeks and it dies by the loss of its wings. The cell of the worker bee is one-fifth of an inch in diameter while that of the drone is one-fourth.

Drones are not honey makers and in April the hives are rid of them. There are three sources of drones—the eggs of the fertilized queen, of the unfertilized queen and of the fertile worker.

The fertile worker is one that has been fed more and has reached a more perfect state of female development than the others. They can lay eggs but only drones are produced from them.

The eggs of the bee are very small and hatch in four days. For eight or more days they are in the pupa state and are fed a pre-digested food caller cheyme, then they are fed on pollen. After this they pass to the chrysalis state and remain there for twelve or thirteen days. They come out of this as the worker bee and for a short time their duty is to feed the young and the queen. After this they go out of the hive in their search for nectar.

The Board of Supervisors of Tulare county has passed an ordinance prohibiting the firing of any firearms on the public roads of the county within 300 yards of any house.

The carrier of the United States mail to Jamesburg from Monterey intends to put on an automobile service if the roads are in good condition when he begins to carry the mails in April.

An election will be called in Alhambra on April 12 to decide the question of issuing school bonds for $35,000 for the building of a new school, and for the improvement of those now in use.

The Index says that Salinas is one of the healthiest cities in the State, or in the United States. Statistics show that on a basis of 4000 population, the death rate per annum is only, one per cent.

The real estate dealers of Petaluma have pledged themselves not to sell any more land in that city or vicinity to Japanese. The Japanese are flocking to that city, and in that vicinity there is a colony of them.

A subscription list is being circulated in Sonoma county to secure funds for the purchase of the Wickersham estate at Sonoma, to be offered the State Commission for a site for the State Agricultural Farm. The property is located a few miles from the city of Sonoma and consists of 1500 acres.

The Sure-Go
Gasoline Engine

Is the proper one to buy to secure the best possible make for the least possible money. For any kind of work, pumping water, grinding feed, shelling corn, sawing wood, or anything else that requires a good steady power.

Our prices are the lowest and our engine the very best. For a better description please turn to your last number of the Cultivator.

Aldritt & Weaver
Sole Agents for the Pacific Coast
115 N. Broadway Los Angeles

A Better Way
To Go East

Than is offered by the Salt Lake Route may be available some day but not at present. Let us suggest some reasons why you should go that way on your next trip.

Because, if you came west via the Salt Lake Route you must have been so well satisfied with the service and comfort enjoyed that you want to return the same way.

Because, if you came west some other way you surely should return via the Salt Lake Route to see a different part of the country.

Because, it traverses a country full of interest, pictiresque and unique in many ways.

Because, it is the short line via Salt Lake City, where you may stop and see the sights of that Mormon city without extra expense.

Because, it runs the famous "Los Angeles Limited," one of the finest and fastest trains in the west, carrying both standard and tourist sleepers through from Los Angeles to Chicago via Salt Lake City, Ogden and Omaha. Therefore, if you prefer to travel in a tourist sleeper you may go just as fast as the passengers in the standard cars, and considerably cheaper.

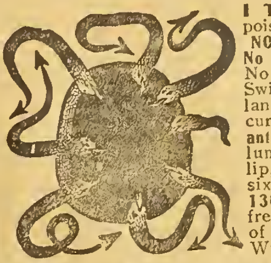
Because, on the "Overland" are standard sleepers through from Los Angeles to Ogden and Denver and tourist sleepers through to Denver, Omaha, Kansas City, St. Louis and Chicago, over the various lines east of Salt Lake City, enabling you without change of cars to see Rocky Mountain scenery to your heart's content.

Because in both trains are run Dining cars in which are served excellent a la carte meals, whitch may be enjoyed at your leisure; no short stops at stations for quick lunch.

Because, well there are other reasons which any Salt Lake Route Agent will be glad to explain to you. Just call on the nearest one for more particulars, literature, etc., or write

T. C. Peck, A. G. P. A.
SALT LAKE ROUTE
Los Angeles, Cal.

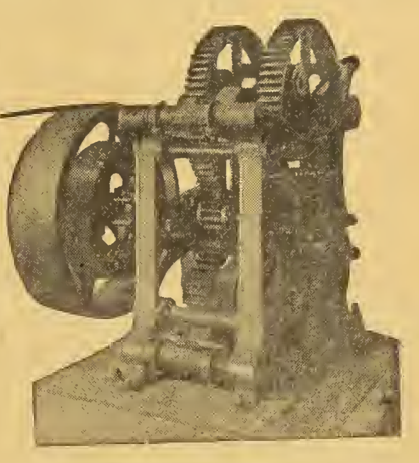
I WILL GIVE $1000
IF I FAIL TO CURE ANY CANCER OR TUMOR



I Treat Before it poisons deep glands. NO KNIFE OR PAIN. No Pay Until Cured. No X Ray or other Swindle. A Pacific Island plant makes the cures. Absolute Guarantee. Any tumor, lump or sore on the lip, face or anywhere six months is cancer. 130-Page Book sent free with testimonials of thousands cured. Write to them.

ANY LUMP IN WOMAN'S BREAST
Is CANCER and if neglected it will always poison deep glands in the armpit and kill quickly.
Address DR. & MRS. DR. CHAMLEY & CO.
Most Successful Cancer Specialists Living.
25 Third St., San Francisco, Cal.
KINDLY SEND TO SOME ONE WITH CANCER

The Pomona Pump



The New Pomona Pump is now being manufactured with machine cut gears and machine cut steel or bronze pinions. The pump fitted with this kind of gearing runs as smooth as a clock and there is absolutely no noise or vibration. The company have recently taken contracts for installing their largest sized pump with this class of gearing for the Artesian Belt Water Company of San Dimas, Western Water & Power Company of Glendora and other large irrigation companies. They are required to furnish these pumps with cylinders up to 12 inches in diameter and 72 stroke which has capacity of over 60 Miner's inches of water. The valves are made entirely of phosphor bronze with ground metal taper seats so there is very little obstructiin to the water in passing through them and it is impossible to clog them with sand. These, in connection with machine cut gears, in the pump head, make a strictly high grade pumping outfit and the best by a long ways of anything on the market today.

This head and valves are both protected by United States patent. Beware of infringing as both manfacturer and user are liable.

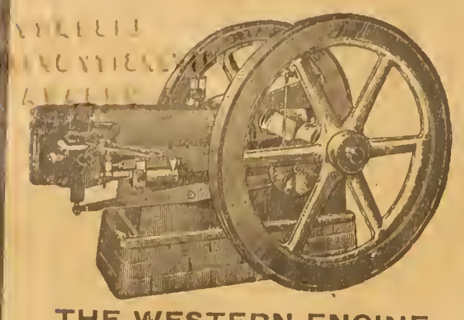
The company has recently installed one of their latest improved heads for the Santa Anita Land Company, a subdivision of the Baldwin Ranch. Below is what the owners have to say about it:

"The new 38 pump you installed for us on our tract on the E. J. (Lucky) Baldwin Ranch is giving us satisfaction in every way. We think we have the very best that money will buy. Both as regards to pump, material used and installation. We made an excellent change when we removed the pump we had been using and installed your make."

We have pleased these people and there is no reason why we cannot please you.

Send for catalog to

The Pomona Manufacturing Co.
Pomona, California



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"From Factory Direct to User"

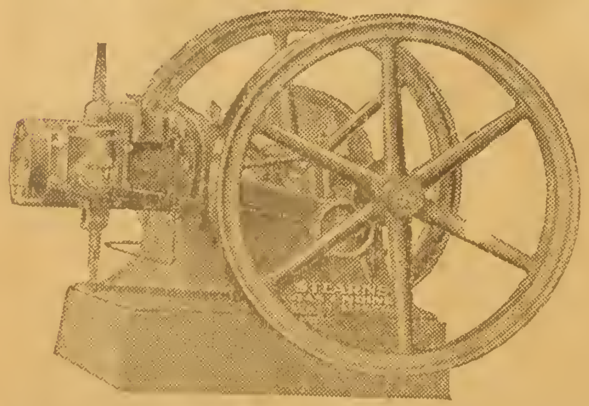
Designed and built by Western experts for Western use with Western fuel. In construction the Western embodies many original, yet practical ideas, which place it in advance of any other make on the market today. The simplest, strongest and best engine for

Irrigation, Power and Electric Plants.
Any Size from 5 to 500 H. P.

Burns cheapest fuel—gasoline, distillate or crude oil—with a saving of 20 to 40 per cent over any other style. **Send for Illustrated Catalogue** fully describing every detail of construction; tells **how** and **why** the Western excels all others; it gives the facts—the proof. Learn what Western engines are doing for others. Send your name today ask for latest issue, A6.

THE WESTERN ENGINE
Maximum Power at Minimum Cost

WESTERN GAS ENGINE CO.
908-932 N. MAIN ST. LOS ANGELES, CAL.



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Has many points superior to any other engine.

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Every One Satisfactory

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NATIONAL WOOD PIPE CO.

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WOODWARD PATENT MACHINE BANDED PIPE
WHEELER PATENT CONTINUOUS STAVE PIPE
BORED WOOD WATER PIPE

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A booklet, "The Whole Story About Wood Pipe," mailed free upon request

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In Fifty sizes and lengths
For Every service
A. T. AMES
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To Raise Fine Birds
You must first of all provide comfortable quarters.

Profitable Egg Getting...
success in poultry business demands it. It is not necessary to invest a fortune in your poultry house. It is not necessary to build a heavy expensive poultry house.

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Rubber Sanded Roofing

Makes a Light Structure—solid, strong and absolutely weather-proof That wear-proof surface of hard flint sand means years and years of extra wear without additional cost. Send for samples and prices

Our complete Roofing Guide "D" will tell you about every class of Roofing and Building Paper for every purpose. Send for it to-day.

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Los Angeles, California.

Caustic Soda 60%, 70%, 74/76%, 78%, 99%. Powdered and Solid. Full information cheerfully given. All goods guaranteed.
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RUBEROID ROOFING

The peer of all with 14 years' record for durability and efficiency.
Cheapest because best.

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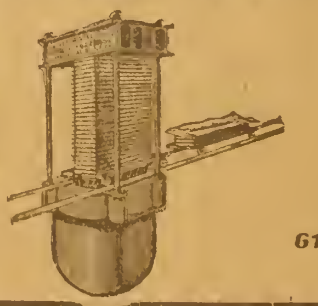
Both Phones 679 242 to 248 So. Los Angeles St., Los Angeles, Cal.

WINE AND OIL MACHINERY
A SPECIALTY



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LOS ANGELES APRIL 6, 1906 SAN FRANCISCO

RECLAMATION OF THE DESERT

FRUITS OF SANTA CLARA VALLEY

Continued from first page.

credit this county with 549,000 apricot trees and 149,000 cherry trees. The apricot is essentially a California fruit, for it grows here as it does nowhere else in the United States, and in the Santa Clara Valley it grows and produces as nowhere else in the State. So it may be safely claimed that the Santa Clara Valley is the ideal section for this fruit, and here are some of the largest and finest apricot orchards in the State. As with the cherries, the apricot ripens here somewhat later than in some other sections of the State, and therefore Santa Clara is not able to secure the cream of the early market. It is the general experience that the early fruits have no other claim upon us beyond the fact that they are early. Like most precocious things, most all early fruits are insipid and of indifferent quality. Not being in the early fruit belt, therefore, Santa Clara has produced the choicest varieties of both cherries and apricots and has based her fame on quality, which is difficult to excel. Some heavy shipments of late apricots are made to the eastern market from San Jose and these as a rule have made very good returns to the growers, but the great bulk of the crop goes to the canneries, and the reputation of the canned apricots from this place is worldwide. Undersized fruit and such as the canneries will not take is sent to the drying grounds.

While we have given prominence to the prune, cherry and aoricot as being among Santa Clara's principal productions, it must not be supposed that her soil is confined to these three fruits alone. We have mentioned these especially because in these she excels. All fruits which can be grown or are grown in our great State are found in Santa Clara County. Citrus fruits are grown, but not on a commercial scale, but peaches are produced in great quantities, there being 538,200 peach trees now bearing here, while there are 138,000 pear trees, mostly Bartletts. Santa Clara Clara County has been especially favored in regard to pears, for while nearly all other parts of the State have suffered heavy losses from pear blight it is yet unknown in this section. Some of the largest olive orchards are found in this county and oil with a world-wide renutation is produced here. The output of the celebrated El Quito groves is known wherever olive oil is used. In some parts of the county the apple has come into especial prominence of late years, and heavy shipments of this fruit are made from San Jose. Very much attention has been given to the English walnut lately, and the production of this nut promises to become an important industry here. The deep alluvial soil and the equable climate furnish ideal conditions for this tree, and the results have been equal to those in any part of the State.

In table and wine grapes, too, Santa Clara takes first rank, and the wine output of the county is both heavy and of first class quality. To summarize, Santa Clara, with her superior soil and unsurpassed climate, can produce anything she desires. She has made specialties of certain fruits, upon which we have touched, because these seem to do better here than elsewhere and to give better remuneration to their growers.

We have been led into these reflections from the fact that at the present time Santa Clara Valley is at the height of her seasonal beautv, and those who desire to see one of the most beautiful sights in nature should not fail to see the Santa Clara Valley in full bloom.

What We Poultrymen Need

What we poultrymen want is to get a first-class feed that we can depend upon to raise our chicks and raise them without a loss.

We want a feed that will raise the LARGEST PERCENTAGE of chicks—a feed that will put LIFE INTO THEM and make them VIGOROUS, STRONG and HEALTHY.

And we also want a feed that will feed the chicks the first six or eight weeks at the smallest cost, or least expense, considering the amount of chicks raised—so that we can raise chicks until two months old at a cost of about 7 cents per chick for the feed—so that we can make some profit, as we need to make the money—it comes handy to us at all times.

We want a feed that will make the chicks thrive, and keep them free from bowel trouble, and also keep them from pecking each other—a feed that will make the chicks grow so fast that they can separate the roosters from the pullets at the age of five weeks, and at the age of two months send the roosters to market and get from $4.00 to $6.00 per dozen for them.

Above all, we want the feed that will raise the LARGEST PERCENTAGE of BIG, HEALTHY CHICKS.

Feed For Little Chicks

Raise chicks—raise lots of them, so that you will have a big flock next year. To raise them successfully you must have the proper feed that will fully nourish them so that their growth will be continuous and they will become big strong, healthy fowls. It dosen't pay to be stingy with the chicks—give them the best food you can get—it means so much to them later on. For the first four weeks feed the chicks COULSON'S SPECIAL DRY CHICK FOOD, which is composed of small pieces of cracked grains, also a variety of seeds and small pieces of charcoal, meat and bone. It therefore contains a variety of the best and most wholesome ingredients in the right proportions to promote the growth of the chicks and turkeys, and fully nourish them so they will reach the average weight of **three pounds each**, from four to six weeks sooner than when fed on common food. 100 lbs. of this **Special Chick Food** will feed 400 chicks the first three weeks.

There may be many other kinds of Chick Feeds which your dealer may tell you is just as good as Coulson's. But don't be deceived; insist upon having COULSON'S SPECIAL. Your success may depend upon it. If your dealer can't supply you, send direct to factory at Petaluma.

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COULSON'S SPECIAL DRY CHICK FEED
THE BEST FEED FOR LITTLE CHICKS AND TURKEYS
100 LBS
COULSON'S SPECIAL DRY CHICKFEED
MANUFACTURED BY A.R.COULSON & CO
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A. R. COULSON, the Chicken Doctor, feeding a flock of young chickens with **Coulson's Special Chick Feed.**

This lot of 800 chicks were fed entirely on **Coulson's Special Chick Feed** up to seven weeks, at a cost of 2½ cents per chick. The first 25 days, each chick consumed an averaage of 1 cent's worth, and up to five weeks, 800 chicks were fed 400 pounds of **Coulson's Special Feed,** nothing else.

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Chicks beginning life on Coulson's Chick Food—raised on **Coulson's Special Dry Chick Feed.**

Broilers sold when two months old for $5.00 per dozen.

Pullets began laying whe nfour months old. Hens that are champion layers—200 eggs per year hens, because they had the right start.

$1.00 a Dozen More

By feeding your Chicks on **Coulson's Special Dry Chick Food** they will be so large and plump that besides sending them to market sooner, you will get from 50c to 75c and possibly $1.00 a dozen more for the broilers or fryers than your neighbor who has chicks of the same age and who feeds some other kind of feed.

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Ask your dealer for COULSON'S SPECIAL CHICK FEED. Tell him no other kind is good enough for you. You want the best, and that's **Coulson's Special.**

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CALIFORNIA CULTIVATOR

Vol. XXVI—No. 14 LOS ANGELES, CAL., FRIDAY, APRIL 6, 1906 Subscription $1 a Year

The Fruits of the Santa Clara Valley

By John Isaac

Now is the season when the great Santa Clara Valley is in her glory. Prunes, cherries and apricots are in full bloom and the air is burdened with their fragrance, while seen from an eminence far as the eye can reach in all directions is a vast sea of waving blossoms. We question whether there is a more beautiful sight on earth than the Santa Clara Valley in the spring and the blossom season. Excursions are run from San Francisco to the orchard sections in order to give the city people a chance to see this grand sight. and they take advantage of it by thousands. for all the trains are crowded at this time, and to take a trip to San Jose to see the orchards in bloom is a treat looked forward to with longing anticipation by the people of the city. But, back of all this beauty, there is a promise for the future, a promise of fruit and prosperity, for all this, divested of its beauty, means dollars—cold, hard cash, which more than its aesthetic feature was what the owners had in mind. Its beauty is incidental and evanescent, but its utility is positive and permanent.

Santa Clara County is the pioneer in the prune industry of the State, and she has held her position as the great center of that industry from the commencement and probably will so long as prunes are grown in California. It was in 1856, just fifty years ago, that Louis Pellier, a French sailor who had come to California in 1849, returned to his native land to bring back a wife. He brought back with him also some trees of the French prune, as we now know it, the Petit Prune d'Agen, still the favorite of all our prunes. It was a number of years before the importance of this introduction became known, but gradually the prune industry forced itself upon the public notice, until in 1870, it may be said to have fairly started, although at that time it was still in its infancy. But it had taken a strong foothold and from then on grew with wonderful rapidity. In 1870 there were but 19,059 prune trees in the State, while at the present writing there are over 9,000,000.

The prune is a very hardy tree, easily grown, and does well under any fair treatment. It is also a very sure bearer, having no off years, but bearing crops year after year during its life. Of course it is affected by climatic conditions and suffers from drought, too much water or neglect, but even in these matters it is less susceptible than many fruits. The prune is also an early bearer and when properly cared for may be expected to give some returns the third year from planting, and to yield regular crops from then on. The yield of a tree in full bearing differs with conditions. Some orchardists claim that they do not get over fifty to sixty pounds to the tree, but a yield of seven to eight hundred pounds of green fruit is not infrequent. About two hundred to the tree may be considered an average yield.

In the beginning of the prune industry enormous profits were made, and this gave a great impetus to it. Large tracts of new orchards were set out each year, and prune growing, prune drying, prune packing and prune selling became the great topics of conversation in this section. In fact the prosperity of Santa Clara Valley and of its chief town, San Jose, hinged largely upon this one fruit, and to understand how important this industry is to this section it is only necessary to think that the output of the valley often foots up 10,000,000 pounds. The labor of picking, packing and caring for this immense quantity of fruit gives employment to thousands of people, while the difference of a fraction of a cent a pound may mean the difference between prosperity and adversity for the community.

For several years past prices have ranged very low, and there has been much complaint among growers, but in spite of this fact the area of new orchards has been constantly extending, and during the present season there has been a very large new acreage set out to prunes. Efforts have been made to combine the prune growers into co-operative organizations for the purpose of packing and marketing their products, but from various causes these have not been successful, and today the industry is in an unorganized condition, each man getting what he can for his crop. Under such circumstances the grower is necessarily largely at the mercy of the middle man and the jobber, whose interests lie in the direction of getting their goods at the lowest possible price. There was a heavy shortage in the prune crop last season, with the result that prices at the present writing are much better than they have been in several years past.

Taking the industry in all its phases, cultivating, pruning, picking, processing, packing and shipping, and it gives almost steady employment to a very large number of people and puts large sums of money into circulation. Of course the picking and packing seasons are the busiest, and at this time every available person is given employment in some of the orchards, drying grounds and packing houses, and for a period of two months men, women and children all find pleasant, light, healthful and profitable employment here in some one of the various branches of the prune industry.

There are now 4,223,540 prune trees in the Santa Clara Valley, or rather in Santa Clara County, for the valley extends beyond Santa Clara County, and this number is being increased by annual new plantings. It is no wonder, then, when so much hinges on this great industry of Santa Clara, that it is the principal subject of interest, and that we hear more about prunes in San Jose than about any other thing.

But, while prunes are the one great crop in this section, and while this is the great prune section of the state, if not of the world, as it produces about onehalf of the total output of this fruit in the United States, it must not be supposed that this is the only product of Santa Clara. Cherries are a most important crop here, and this fruit does here as no where else in the state. In fact the cherry crop of Santa Clara Valley ranks next in importance to the prune crop, and while not so early as the output of some other sections, very large quantities are shipped to the eastern market, but by far the larger part finls its way to the canners, and here in San Jose is packed the greater part of the canned cherries of the State. Soil and cilmate in this valley are especially favorable to the cherry, which thrives here as in few other locations. The soil as a rule is a deep rich alluvium, with a heavy admixture of humus, formed at some remote period by the filling in of the bay of San Francisco, which even now reaches far into the valley. This has been filled in by detritus from the surrounding mountains. and has been covered with a rank growth of vegetation for ages before it was brought under cultivation by man. It is an ideal orchard soil and has shown itself the most productive in the State. This soil is also very retentive of moisture, and as the winter rainfall is usually ample there is rarely any lack of sufficient moisture to make crops.

Apricots are another of the favorite fruit crops of the Santa Clara Valley, and this fruit here attains its perfection. In fact, Santa Clara may be said to lead in the production of these three fruits—prunes, cherries, and apricots. The latest figures

Prune Curing Scene in the Santa Clara Valley

Continued on Page 314

Deciduous Fruit Culture

BY J. W. MILLS, POMONA, CAL.

CANNER'S WHIMS.

One of the problems of the peach grower is to know what variety of cling to grow for the canner. Fifteen or twenty years ago the farmers were advised to plant Lemon Cling. It is perhaps the best looking canned peach to be found and the quality is good, but it is difficult to grow them large enough to make canning sizes and that makes them unprofitable for the grower. As a consequence this variety will never be safe to plant and is almost a thing of the past as a commercial peach. Sellers' Cling became a good first in the best cling growing districts and is still a favorite. Tuscan Cling at one time was highly recommended by canners but later was condemned by certain canners and after a time was eagerly sought after by the same canners. At a farmer's club meeting in Southern California about ten years ago one of our leading canners stated that Tuscan Cling was not a good canning peach and was known to the Eastern trade as "rubber goods." However, this peach has brought good money in Southern California since then. It is a prolific bearer and is inclined to be small unless heavily pruned and thinned severely.

The best cling for canners is no doubt Phillip's Cling. It is not a large peach but it has a small pit and when peeled and pitted shows a greater amount of clear fruit than larger peaches of other varieties.

This peach was brought out by Mr. Joseph Phillips of Marysville. He was the pioneer peach grower of Yuba county, having planted four of the largest peach orchards, in their time, in that part of the state. He is now being supported by the county while hundreds of growers are getting rich from the results of his labors.

PRUNING PEACH TREES.

The constant number of inquiries regarding spring pruning of peach trees makes it advisable to reiterate advice on the subject. There is a common notion that late pruning is injurious to the peach tree. This is not the case and could all peach trees be pruned after the spring growth starts, it would be just as well and perhaps better for the trees. When trees are pruned early in the winter, large wounds do not heal over as quickly as when the cut it made late in the spring. The reason is that the stubs dry out when cut early and the new growth that heals over the wound, starts lower down. It will be noticed that when a branch is broken by the team during the season of cultivation when the trees are in full growth, that the wound begins to heal over almost immediately and very often completely grows over before fall.

The chief disadvantage of spring pruning is that it comes just at the time the rush of spring work comes on. For this reason it is impractical on a large scale. In such cases, the heavy pruning should be done when convenient any time after the leaves begin to fall. The light pruning of the small branches may be done at thinning time. At this time go in with the hand shears and cut back the small fruit bearing wood so that the fruit is properly thinned thereby.

The effect of this manner of pruning was ascertained at the Pomona experiment station some years ago. Four trees of equal size and thrift were selected for the test. Two of Old Mixon Cling and two of Morris White. One tree of each variety was thinned by hand in the old way, that is the fruit was thinned to about eight inches apart on the branches. The other two trees were pruned with the hand shears, cutting the branch so that the proper amount of fruit remained even though it hung in clusters. At harvest time there was no difference in the size or quality of the fruit on the trees thinned in the two different ways. Prof. A. R. Sprague had a similar experience with his peach trees in his Antelope Valley orchard. Part of his orchard was thinned in the regular way, but the work became so long-drawn out that he saw that a more rapid method must be employed so he put his men to work with the hand shears and clipped part of each heavily-laden branch. When harvest time came there seemed to be no choice so far as the quality of the fruit was concerned, but the pruning method was the fastest and cheaper method of thinning.

The point brought out is that a tree will properly develop a certain amount of fruit and it makes no difference whether it is evenly distributed or not. A cluster of several fruits at one point will not weaken a branch but will develop, and it will be larger between the fruit and the main branch that it is beyond the cluster of fruit. Anything that will stimulate the circulation of sap will make a proportionate increase in the building up of tissue, and nothing will do this more efficiently than a cluster of fruit.

THE AMERICAN FIG.

Fig growers in California will be interested in reading an account of how the Smyrna Fig of America is picked and handled in its native land.

United States Consul Norton, of Smyrna, has sent to Washington a report describing the methods of gathering and packing the Smyrna fig for market which possesses some very interesting facts for the lovers of the fruit.

The fig district of Smyrna lies largely along the line of the Smyrna-Aidin Railroad. Trees begin to bear in their sixth year, and in full vigor in their fifteenth year. Fig trees on the low plains yield fruit which is much larger and richer in saccharine matter than those in higher altitudes. They often suffer, hoever, from an excess of moisuture in unusually wet seasons when groves on higher ground are less harmed, owing to the facilities for drainage.

The fruit ripens about the middle of August when it is picked and dried in the open air for from three to six days It is then packed in sacks of about 250 pounds each, two of which constitute a load for a camel, and are transported to the nearest railroad station. After arrival at Smyrna camels also transport the sacks to the warehouses of the dealers. Carts are not employed, because the fruit is liable to be damaged if the sacks are pilled on top of each other. The arrivals from the country are promptly purchased by the various great packing houses, which have each a large corps of employees, chiefly women and girls, for the operations of sorting, washing, drying and packing the friut for the market. This means work for many thousands of the population of Smyrna during the months of September and October, and the average degree of prosperity among the lower classes during the entire year depends largely on the amount of money set in motion in this short period.

The sorting of the figs is done with great care. Color, but more especially size and thickness, or, rather. thinness of skin, guide the classification. The inferior grades are eliminated and sold for purposes of distillation. A certain quantity of this grade is exported to Austria and Hungary and used as a substitute for chicory. The delicate flavor of Vienna coffee is due to the presence of dried fig powder. The better grades are prepared for export in various ways. The least expensive packing is linen or other bags, hich are used for the less valuable qualities of figs. The finer grades are subjected to a certain manipulation before being tightly packed in boxes containing fro mone to elevn pounds. During the manipulation the workmen constantly dip their fingers in sea water, the result being that the fruit is better preserved and its sweetness is not diminshed by long keeping. The term "macaroni figs" is applied to fruit which has been gently rolled between the palms of the hand, so as to resemble an elongated elipsoid. "Loucoum figs" are prepared by pressing the fruit into a reçtangular form, not unlike in size and appearance the oriental confectionery known as "Turkish Delight," or "loucoum."

The great majority of the choicer figs are packed in layers. The upper side is split, and the fig is flattened out. This method permits expert manipulators to give a more presentable appearance to small figs than is possible in preparing the "macaroni figs" or "loucoum figs." The latter two methods, however, are the most favorable for proper curing during transportation. Boxes of figs prepared by either of the three methods are usually exported in crates, holding about 330 pounds.

The smyrna fig crop of 1905 was exceptionally large, more than 20,000 tons, but it was all sold at fine prices, and an exceedingly small stock has been left on hand. There is much speculation in the trade, and a good share of the crop is always sold long before it is picked. Negotiations for any considerable supply have to be made well in advance of the harvest.

A FINE COUNTRY HOME.

Through the courtesy of Mr. E. C. Hitchcock, editor of the Fullerton News, a representative of the Cultivator last week enjoyed a drive through the magnificent home ranch of Mr. C. C. Chapman. just outside of Fullerton. On this ranch Mr. Chapman has built a modern residence surrounded with spacious well decorated grounds. For a background he has an extensive orchard of the most heavily-laden orange trees we have ever seen. It was from this famous orchard that the "top notch price" oranges were sold a few weeks ago, bringing the heaviest price per box of any ever sold in the open market. Few country homes in the State take rank with Mr. Chapman's.

Southern nurserymen say they think that oranges are more hardy when grafted on the "hardy orange" Citrus trifoliata. This does not accord with the generally accepted view that the stock does not influence the cion.

Plant Loganberries

For profit. We are prepared to purchase the fruit and, in fact, all kinds of small fruits, even if too ripe for other uses. If you have

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Six varieties for Silk Producing and Fruit Berries. Special attention is called to the Morus Nigra, a Persian variety especially for fruit. Also to the Japanese Mulberry, a variety generally used for silk culture.

I am also prepared this year to furnish 10,000 Rooted Grape Vines, following varieties: Flaming Tokay, Black Malvoise, Black Prince, Cornichon, Sable Kanski and Muscat. I have also some very fine Orange Quince Trees and Pomegranates. Send for descriptive circular free by mail.

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Grown from carefully hand selected seed. To clean up—I will sell balance, 6 to 8 ft. trees, at a
GREAT REDUCTION
Come, Write or Wire
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Practical Farm Science

BY PROF. A. J. COOK

SAVE THE WAX.

Since, by the use of comb foundation we can secure far more even and desirable combs, and can also secure larger profits from our bees, we must see to it that we preserve all comb which should be melted up into wax. The amount of wax which can be saved in a large apiary in a year is indeed, surprising, and will help materially to swell the profits from the bees. All cappings, for these furnish very fine wax, which are cut from the combs of the extract, should be put into a can to drain and later melted into wax.

The solar wax extractor is very convenient and serves admirably to help us preserve the comb and render it into wax. This is simply a shallow box lined with tin, about three or four feet square, with a double cover, one simply of glass, and the second of wood, lined with glass over black cloth. This last serves as a mirror and also as a reflector to concentrate the sun's rays, and thus adds to the heat of the extractor. This cover is open during the heat of the day, and at such an angle as best reflect the heat rays. The other glass serves to confine the sun's heat and thus this extractor becomes very effective in all days of hot sunshine during the season. We have only to throw pieces of comb into this box to secure the wax. A tube at the bottom in one corner serves as a nozzle, and helps to empty the wax from the extractor.

The old-time Swiss wax extractor was a tin vessel, within which was a second one, made of perforated metal, which received the comb. This had a close-fitting cover and the whole was set over a kettle of boiling water. A tubular nozzle permits the wax to run out as it melts.

A wax press is one of the late improvements in this matter of securing the wax in our surplus combs. The wax is melted by placing the combs in boiling water, when all is put into a form, much as the ground apples are placed in when we desire to express the cider. As with the cider press, a cloth holds the comb. By applying the pressure while all is still hot, the wax can be very perfectly extracted.

Of course the oldest and crudest way to extract the wax is to place all the combs in a cloth bag and submerge all in boiling water. As the combs melt the wax passes through the porous cloth bag and rises to the top; so that in the end, after the water cools, we have our sheet of wax. Occasional kneading or stirring the mass in the bag makes the work more thorough. If we secure our wax by use of this crude process we must be cautious not to let the bottom of the cloth bag touch the bottom of the kettle or it will burn. An inverted pie pan in the bottom of the kettle will prevent such an evil result. If the wax is not clean, the lower impure portions can be scraped off and remelted. The cakes should be entirely free from impurities.

LARGE HORSES.

In my observation in Germany, I see that large teams are thought to be a necessary adjunct to the farm. In this respect England and France can learn a valuable lesson of Germany. Indeed, if we may except our own United States, Germany leads the world in education applied to the practical arts of life. She spares no effort to learn the cause of things, and then she puts in practice the rules that science has shown to lie at the foundation of success. Germany's unparallelled progress, even with the handicap of her great army which she supports so generously. has largely depended on this thorough research work, which is carried on everywhere in all departments of business.

DEEP PLOWING.

I have believed for years that one of the most common mistakes of our orchardists in Southern California was too shallow cultivation. I am convinced that one of or two deep plowings each year, at the beginning and close of the winter rains, are most desirable. In my study of German methods, I find that this deep plowing is the common practice here. Indeed, they are ahead of England, France and even America in their general practice of this deep thorough cultivation. They often plow fifteen inches deep as I am told by those who have given to German agriculture thorough study and investigation. Theory is all on the side of such cultivation. We know today that the office and work of soil bacteria in all vegetable growth is most important. That the necessary soil changes may occur; these minute vegetable organisms must be present and vigorous. Nitrification is just as important as seed or sunlight. But nitrification is solely a microbe process and so all successful agriculture must take account of these microscopic organisms. But the healthy action of these Lilliputs demands air and moisture in generous supply. This can come only in a loose friable earth bed. Such a condition demands deep culture. The same practice of deep stirring of the soil also conserves the moisture which the plants, no less than the bacteria, must have at call if the maximum growth is secured. In such arid climes as California and Arizona this conservation of moisture is all the more imperative I am thoroughly convinced that in nothing is California agriculture as generally practiced so lame as in the shallow culture which prevails in most sections among the orchards. I have word that in one large orchard in Southern California last year the net profits were 40 per cent. on the valuation of the orchard. In this orchard I have noticed the deepest, best culture that I have witnessed in all my observation of orchards either in America or Europe. While I am aware that post hoc is not always propter hoc. I am very certain that it is in this case.

Deep culture by plow in fall and spring and by strong, long, sharp-toothed cultivators during the summer means much, and fancy fruit, and it is such fruit that always catches the market.

PRUNING GRAPE VINES.

Muscat grape vines should be pruned with two or three buds to each cane. When they are on a trellis or arbor, the canes on the long permanent branches should be pruned the same way. Different varieties of table grapes are pruned in different ways. Tokay, Cinsaut, Malvosia, Black Morocco, Napoleon, Olivette and Verdal are pruned short. Almeria, Emperor, Purple Damascus, Golden Queen, Black Corinth, and all the Persian varieties should be pruned long. This is only a partial list, but contains the more common sorts.

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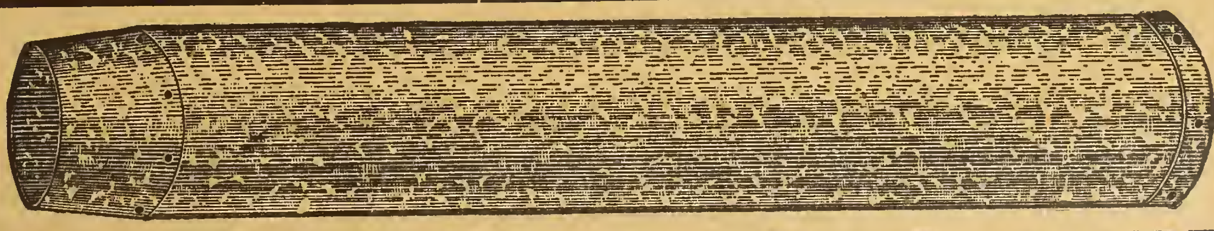

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THE PEAR BLIGHT

The following statement of the work acomplished in the fight against the pear blight in California was made by Prof. M. B. Waite at the close of the present season's campaign of education.

"We are not entirely satisfied with the results achieved in the eradication of pear blight in California. Our hope has been to completely exterminate the blight in this State, just as the foot-and-mouth disease was exterminated in New England. Our ambition was to stamp out the disease along the same lines in which pleuro pneumonia was stamped out of existence in the United States. Perhaps we should be satisfied with control, even if we cannot accomplish complete eradication. In my recent trip over the most infested districts, it has certainly been a pleasure to find the thoroughness with which the work has been done in certain orchards. One of the best worked orchards in the State is that of Mr. Howard Reed, near Marysville. Mr. Hayward Reed, of Sacramento has several large blocks of Bartlett pears, aggregating 25,000 trees, which have been very well treated. The work of Mr. Henry Brink, between Vacaville and Winters, has been strictly first class and is remarkable in that he followed the blight well down into the roots and eradicated the same after digging away the soil. In the Vacaville district there are a number of very well worked orchards; on the other hand, there are a number of large orchards there containing numerous cases of hold-over blight. Altogether, there is more hold over blight in the Vacaville district than anywhere else in the State. The large pear district south of Sacramento has had more good work done in a connected series of orchards than elsewhere in the State. Most of the orchards in this district have had each tree inspected by the Government, State and County experts. Certainly more than 90 per cent. of the orchards along the river, below Sacramento have been well handled. Doubtless, nearly as large a per cent. of the trees north of Sacramento have had the same careful treatment, but the pear blight experts have not been able to reach them all in the final inspection. Possibly the froce of men engaged in this work should be satisfied with the first year's efforts. Pear blight is such a new thing to the California orchardist and to the laborer employed in the orchard that all of us are working at a great disadvantage. A great deal of time of the men employed has been spent in instruction work and in finding and correcting the mistakes that are made. In the future we hope to have the majority of the California orchardists as experts in pear blight eradication, so that the labor can be properly supervised and instructed. Ultimate success in control or in complete eradication will ultimately depend on the thoroughness, intelligence and skill with which the orchardists themselves carry out this work.

The increased interest that has developed as the campaign proceeded is one of the very satisfactory phases of this work, and gives a hopeful outlook for the future.

The results of this winter's work will begin to appear upon careful examination of the blossom clusters about two weeks after the petals fall. Upon close looking, the shriveled and blighted flower clusters may then be found. By the middle of May the spread of blight in the twigs and branches will have occurred so that no one could fail to observe it.

The amount of blight which spreads from the hold-over, which has either been accidentally missed or carelessly or purposely left in the orchard, can not be predicted. It varies greatly according to the weather conditions. Last year it was much less in the Suisun valley and the river districts south of Sacramento than elsewhere in the State. It is to be hoped that the spread will be moderate this year and that the results of eradication will show so distinctly that renewed confidence will come to the grower in his fight against this disease.

I have been asked repeatedly during the last few days whether the growers should keep on cutting out blight during the spring and summer. We think it desirable not to attempt eradication of last year's hold-over during the blooming of the pear. It is especially not desirable to dig up the trees which have the blight running down into the roots, as the chances for infection of the blossom will be increased. Cutting out of new blight on the flower clusters and the twigs will do some good, however, depending entirely on the distance below the blight that the cut is made. In winter cutting on the dormant tree, one can cut three or four inches below the disease. In summer cutting, one to two feet on small twigs and even three to four feet on large branches below the slightest discoloration is necessary for success. There are two causes of failure in summer cutting: First, the failure to get below in all cases the advancing margin of the blight; and, second, the new infections which have not discolored the tips of twigs sufficiently to be seen. These develop a few days after the trees have been gone over into well marked cases. Summer cutting of blight, therefore, is apt to result in discouragement. Some of the cases are reached and headed off; others are not.

Something can be done toward checking the blight where it appears abundantly in blossom clusters by practicing moderation in the spring and summer cultivation. I saw one orchard on the Feather river bottom which made over four feet of growth last year without even plowing.

Where irrigation is used, as in the foothil orchards of Placer county, if blight appears abundantly in a given orchard, the amount of water used should be reduced to the smallest quantity necessary to maintain the health of the trees.

I regret to say that only a few orchards have been thoroughly sprayed with the thickened lime-sulphur-salt wash as recommended. While this is secondary to the main treatment, and does not remove blight from the tree which is sprayed, still it is a very important method of holding the blight in check during the critical blooming period. It is, therefore, worthy of more attention than it has received in this State. It enables the orchardist to temporarily seal up the blight concealed under the rough bark on the bodies of the trees and prevent its getting out on the blossoms."

NORTHERN WALNUTS.

Mr. Felix Gillet, a large walnut grower, calls attention, in the Oregon Horticulturist, to the fact that while the Mayette and Franquette walnuts, on account of their large size, are the favorites for desert nuts, there is also a large demand for Chaberte nuts for the use of confectioners. The meats of the various fruits named are too large for use on cream candies, etc. Confirming Mr. Gillet's statement, we notice that eastern trade papers report that the supply of Chaberte walnuts in France has already become exhausted this season, and that prices on that variety are at present so high that Chaberts cost 27 1-2 cents per pound laid down in New York.

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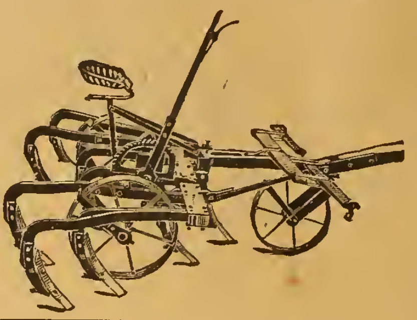

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With the Citrus Growers

BY J. W. MILLS

MAINTAINING FERTILITY OF ORANGE GROVES.

A good portion, we have found, of the orange growers have an idea that peas or vetches, if grown for sufficient length of time, will entirely supplant commercial fertilizers. This has been suggested by men experienced in eastern orchard work. but the orange seems to be so susceptibe to conditions and elements of soil that it seems certain that it is in a class by itself as far as the question of fertilization is concerned. There is one extensive grower in Riverside who has demonstrated to his satisfaction that it pays to use commercial fertilizer no matter if he does grow peas and add stable manure. He has made experiments in five acre blocks, using a cheap plot. The Cultivator may give the detailed result of these experiments at some future date.

One of our small growers recently inquired if it were advisable to use tankage at $50 per ton on a portion of a grove where the trees had turned yellow. A big crop of peas had been grown over the entire tract, but a "commercial expert" had advised her to buy some of his $50 tankage and use it. Our advice was not to try it by the ton but by the unit. At $50 a ton, tankage would have to be mostly nitrate of soda. Pure nitrate of soda can sometimes be bought for that money. As long as growers buy by the ton some unscrupulous fertilizer men will continue to bleed some of them.

THE RIPENING OF ORANGES.

This work is in connection with the systematic study being made by the writer, of changes that occur in fruit during its growth and ripening. The oranges increased in actual weight of total solids and sugars from the beginning to the full maturity of the fruit. At all stages of the growth of the fruit the total sugars are divided about equally between reducing sugar and sucrose. The marc of the orange is formed very early in its history and remains constant in weight during its growth and development. The acids are also formed at an early stage and apparently increase gradually, but almost imperceptibly. Storage of the fruit at all stages of its development results in slight loss of total sugar, a marked increase of reducing sugar, and a corresponding loss of sucrose. The loss of total sugar noted above is to be explained as in the case of apples, by the consumption of reducing sugar as a result of the respiration of the fruit. The weight of marc remains practically constant and the weight of acids appears to decrease slightly on storage during the various stages of development of the orange.

"SCIENCE."

SOUR-SAP AND GUM DISEASE.

The name of "sour-sap" applied to deciduous fruit trees has more than one form. The sour sap that kills peach trees with wet feet is entirely different from that which sometimes kills apricot trees in April. The death of stone fruit trees which stand in water is due to the fact that they are standing in the water. Their trouble may be detected by a peculiar, sweet odor that is sent off from them. The first visible sign is a slight wilting of the leaves, which are usually forced prematurely. When any of these signs are apparent the trees are "gone," and there is nothing that will save them.

Apricot trees are often affected with a fermentation of the sap. That is altogether different from the above described trouble. It occurs at the time of the rankest growth.

These diseases are supposed to bacterial, or are due to a certain fermentation. In either case it is judicious to guard against scattering the germs. Where there is evidence of gum disease, dipping the shears in a solution of bluestone water between trees will stop contagion by pruning. We have seen orchards where the trees in small areas were totally destroyed. The gum disease seems to come and go. The last serious infection in Southern California orchards came during the series of dry seasons of a few years ago. It would appear that trees growing under stress of adverse climatic conditions suffer most. At any rate, during those unfavorable seasons, and especially the last few this gum and blight on apricot trees were the most severe. Some trees had root knot and some had no sign of it. This disease seems more common in Southern California than in the north. Our warm February weather, followed by cold chilly weather, seems to take the edge off of the thrift of certain varieties. This has not been demonstrated as a fact. but indications point that way judging from the fact that the trouble is chiefly in sections subject to such climatic conditions.

Splitting the bark on two or three sides of the tree will relieve gum affected apricot trees. If the gum is allowed to collect beneath the bark it will force itself around until the tree becomes girdled. If the gumming is not accompanied by fermentation splitting the bark will cause the tree to start a vigorous growth and quickly recover. The bark should not be cut on trees which show no signs of gum. We offer this as a precaution, as the idea sometimes prevails that what is a cure is also a preventive, while in fact it may be the means of spreading the disease.

SHIPPING ORANGES TO ENGLAND.

There have been many efforts at various times to ship oranges from California to the London market, some of which has been exceptionally successful from a financial point of view, and some indifferent. As a rule, the fruit which arrives in good condition commanded the admiration and a good portion of coin of the English public.

This year the Western Produce Company, Limited, of London, began the season with several shipments; the forwarding agents at this end being the Spence Fruit Co. Mr. H. E. Collins, of the Agricultural Chemical Works, who advises with the Western Orchards Produce Co. regarding conditions at this end, furnishes us with some information regarding these shipments, and especially with the letter which follows.

As we noted the fruit which arrives in good condition and is strictly high grade has commanded ready sales and good prices, but unfortunately the long shipment with sometimes indifferent packing has caused some decay. The letter is from the Honorable Secretary of the Scientific Committee of the Royal Horticultural Society and is a report on the conditions of this decayed fruit, the possible cause and prevention. The following is the letter:

London, Feb. 16th, '06.

Dear Sir:—The oranges you send were attacked by the "fungus Penicillium digitatum," a frequent cause of loss among oranges. The trouble usually appears after the oranges are packed and on their way to England, and this appears to have been the case with those you send. Navel oranges are frequently attacked, the open eye of this fruit forming a convenient place for the entry of the minute fungus spores; sometimes, indeed, they are infected before they leave the orchard, but more frequently in the curing house. After packing the disease may spread throughout a box from one fruit to the next.

The conditions for the growth of a fungus such as this are particularly moisture, warmth and a suitable material upon which to grow. In the Navel orange a drop of water will often condense in the open end, and there the fungus finds a very suitable place for growth.

The best means of preventing the growth of the fungus in the fruits appear to be as follows: Wrapping fruits in tissue paper which, combined with some amount of ventilation, has within certain limits proved very valuable as a preventive of decay. Careful destruction of all the decaying fruits in the orchard or in the packing house is most important, since this destruction will much lessen the number of spores which would otherwise be floating about in the air. This should be combined with disinfection of the packing houses, either by thorough drying by whitewashing, or by burning sulphur in the houses.

Probably the means of destroying decaying oranges is by means of deep burial or by fire.

If I can make any point clearer on the foregoing, or if we can be of assistance in other direction, please let me know.

I must congratulate you upon your fine fruits.

Yours very truly,
Signed:
F. CHITTENDER.
Non. Sec. R. H. S. Scient. Com.

There are doubtless in the above hints of value to our shippers. At least, will be of value when the market in America is such as to encourage foreign shipments, especially the export rate made by the trans-continental lines combined with the trans-Atlantic lines is such that it only costs about ten cents per hundred more to place a box of oranges into the London market than it does in New York. Of course, at this time, when the home market is especially fine, there is little disposition to risk the long journey, but with the hints above and the common sense of the American shipper, the English market should be developed far more than has ever yet been done.

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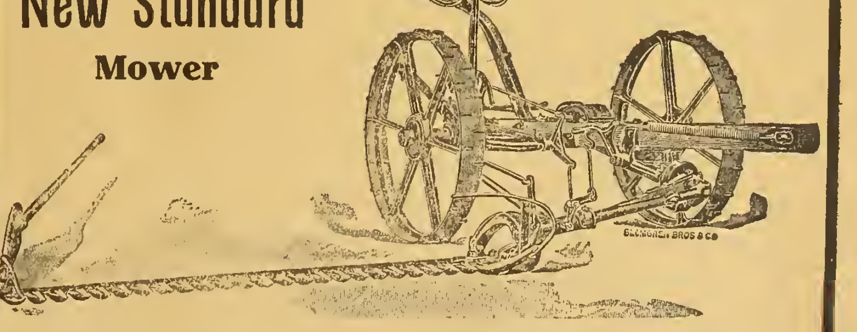

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In the Vegetable Garden

BY ERNEST BRAUNTON, LOS ANGELES, CAL.

THE VEGETABLE GARDEN.

Soil and natural drainage must be considered in selecting the location. A light sandy loam is usually preferred, but fine vegetables are grown with ordinary care on heavy dark soils, on sticky clays, and on sands apparently no better than the seashore. A mellow, rich soil which will hold moisture well is easily recognized, and should be chosen if available; but hardly any soil need be rejected as impracticable until tried. Good natural drainage should be sought. Marshy or even damp ground will call for much labor and expense to make it fit for use, though in dry climates without summer rains, like our own State, such lands are often selected by the market gardener. The character of natural drainage can best be determined by observation of the lay of the ground, of the appearance of the soil, and of the vegetation it has borne.

The size of the garden plot should depend on the size of the family and their taste for vegetables; also upon what vegetables are to be grown as field crops. A quarter of an acre is considered sufficient for a garden for a family of four. If potatoes, cabbage, corn, and melons are to be grown in it this estimate is hardly sufficient; but if these vegetables are put in the field, as they should be, usually less than half an acre will be enough, giving room for early potatoes and sweet corn.

OUR RASPBERRIES.

The American raspberries, for there are two types of them—the red and the black—are both familiar to every lad who has passed along the highways of the older States. These berries are aborigines, and, like many other native plants, were entirely neglected by the early settlers until they proved to their own satisfaction that the raspberry of the garden of their native land could not be successfully grown in the new country. They then turned their attention to what Nature had placed before them, and from the wild berries of the clearing have come the American raspberries as we know them today.

MULCHING VEGETABLES.

Most farm gardens are made with considerable enthusiasm is the spring. Many of them are tended carefully at first, but with the approach of dry, hot weather, just when they need attention most, they are generally neglected. Any method of garden culture, therefore, that requires practically no labor during the summer months when the rush of farm work is greatest, certainly invites careful attention.

The use of straw mulch in place of cultivation to conserve soil moisture and prevent weed growth in gardens is no new thing. Mulching has found restricted use in vegetable and fruit gardens for many years. Potatoes and strawberries have probably been mulched more than any other crops, but several other vegetables have been occasionally grown in this way, and cultivation in small-fruit gardens, vineyards, and even orchards, has been not infrequently supplemented by mulching. In many cases very satisfactory reshlts have been reported from the use of mulches. Considerable attention has been given the subject by experiment stations in various parts of the country, and a majority of the tests resulted in favor of mulching.

SHADING STRAWBERRIES.

Experiments in shading strawberries carried on for two seasons and in three localities in an Eastern state gave fair results for home plots, though as managed the practice has not proved profitable in growing fruit for the general market. Only when a thin cheese-cloth was used was any increase in yield obtained, while with a moderately heavy cheese-cloth there was a marked decrease. In no case was the increase in yield sufficient to pay for the added cost of shading, which is estimated to be about $350 per acre.

Shading produces a considerable larger berry, and in some cases one of better general appearance. For these reasons the practice may be adapted for the growing of fancy and exhibition fruit or for home purposes.

Shading introduces something like hot-house conditions. Aside from its value as a protection against frost, its beneficial effects are due in large part to the protection it affords from wind. Evaporation and transpiration are much reduced, resulting in great economy of soil moisture. The temperature of air and of soil is raised somewhat, resulting theoretically in more rapid growth, provided these results are not offset by too great diminuation of light. Interference with the access of light is the weak point in shading. The cover must be of such material as to transmit the largest part of the light. It is noteworthy that the varieties that have given best results under cover in the tests, Marshall and Brandywine, are two of the varieties known by experience to be among those best adapted for growing in California.

GARDEN FERTILIZERS.

Of leading importance in preparation of the ground is the supply of plant food, of which the chiefest essentials are nitrogen, phosphoric acid, and potash. It is important that any fertilizer used to supply these elements should be thoroughly distributed through all the soil to be reached by the roots of the plants, and this distribution must be completed before planting. Turning and returning the ground and harrowing again and again are useful for the purpose.

A wise selection of fertilizers can not be secured by rule; it is very largely a matter of experience. A sandy soil is often deficient in the essentials of plant food, while a clayey soil contains them in abundance, especially potash. A limestone soil is likely to contain a considerable proportion of phosphoric acid. What is good fertilization on a given soil for one crop may be very unsatisfactory for another. Where it is the purpose to establish a garden permanently, it will be profitable to determine the need of the soil for fertilization by close observation of results from year to year. It will be well to make notes of important points. Not only will the facts thus gained be useful for future gardening, but they will often find application in the larger operations of the field.

THE PEA AND BEAN FAMILY.

The word legume is used by botanists to denote the one-celled two-valved seed pod, containing one or more seeds, borne by plants of the botanical order Leguminosae. The most common representative of this family which are used as food are the various kinds of beans and peas. In common usage the term is applied to the plants themselves, which are hence called leguminous or legumes. The term pulse is also somtimes applied to this class of plants. The papilionaceous or butterfly-shaped flowers and the pendant pods of the pea and bean are familiar in every garden, while the ripened seeds of the pea, bean, lentil, and peanut are among the standard food stuffs offered in our markets. Taking the world over, the legumes are, next to the cereals, the most valuable and the most extensively used among vegetable foods. The seeds are eaten green, either alone or with the pod, as in the case of string or snap beans and edible podded peas, and also in the fully ripened state, as split pea, dried bean, lentil, and peanut. Most species of the pea and bean have been greatly improved by the gardeners' art.

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The Ornamental Garden

BY ERNEST BRAUNTON

COUNTRY LIFE.

There is a certain dignity about country life; country boys and girls who become city men and women know more than those who never heard of nor saw a back-log on an open fireplace, a foot-log across a creek, or a grapevine swing on the pleasure ground; who never went nutting in the fall, nor picked the wild berries fresh from the vines in the summer. Albeit such knowledge and the associations may or may not be of commercial value, yet these country boys and girls make the happiest, the best and most useful citizens in cities, towns or country.

CHRYSALIDOCARPUS LUTESCENS.

This palm, which usually goes by the name of Areca lutescens, is popular for home decoration, being second only to the so-called Kentias. It is not nearly so hardy as the latter, nor will it stand the same amount of abuse, but its foliage is finer and its general habits more graceful, though its color is not so good. For the latter reason it is not so common in California as in bygone days.

A HARDY EUCALYPT.

Eucalyptus Gunnii has rather a wide range, being found from South Australia to New South Wales and also in Tasmania. but always on the higher mountains, and in a dry soil. It is one of the smaller species, its height in its native country being given as about 30 feet. Is said to be perhaps the hardiest of all the species, and experience shows that it is really hardy even in the south of England and Ireland.

NIGHT-BLOOMING CEREI.

These old garden favorites are the best known, no doubt, of all the Cactus family, and are quite generally grown throughout the world. The C. grandiflorus is the most popular of this section, by reason of the delightful fragrance exhaled during the short life of the flower. The name, "Night-blooming Cereus," is generally applied to all the climbing, nocturnalblooming of the genus. Cereus grandiflorus is itself very variable both in plant and blossom, and has been so extensively hybridized with other species, that it is often difficult for the best posted cactus sharps to recognize it among a general collection. All are natives of South America, Mexico or the West Indies.

KEEPING POINSETTIAS.

With regard to the plunging of the ends of the cut stems of Poinsettia bracts in boiling water to keep them fresh and prevent their drooping when cut, the loss of the milky juice or sap is the cause of their flagging so quickly, and the action of the boiling water is to seal up the pores of the wood. Plunging the ends of the stems in cold water, or such as is used for watering the plants in the house in which they have been grown, also answers the same purpose, but this must be done at least twelve hours in advance of the time the bracts are required for use. The use of boiling water has this advantage—the bracts can be used directly after, as bleeding ceases quickly.

RURAL LANDSCAPES.

In the business portions of cities, the laying out of streets in rectangle form upon nearly as level a surface as possible is essential, but in the residence portion, especially in the suburban or rural districts, the undulations of the ground should be heeded, giving some of that picturesqueness which mav be so charming a quality in an otherwise uninteresting quarter. Often depressions are filled, or hillocks with their accompanying foliage cut away in order to make things look trim, thereby giving a sameness and monotony, so undesirable in landscape architecture.

RUDBECKIAS.

These North American plants are very showy in autumn, and form pleasing contrasts to other flowering plants in beds and borders from spring to late fall. The one known as "Golden Glow" is the best species of all; the flowers are bright yellow, showing up conspicuously all the summer. Other kinds worthy of a place where room can be found for them are R. speciosa, R. laciniata, R. purpurea, and R. subtomentosa. Rudbeckias are compact, and the flower-stems are thrown erect well above the dark green foliage. They are not fastidious as to soil, any fairly good garden soil appearing to grow the plants well. Increase is readily effected by dividing the root-stocks soon after flowering is past, or, indeed, any time during the resting period. All the species above mentioned are perennials, but an annual well worthy of a place in borders is R. bicolor. This rarely exceeds 1 foot in height, and the individual flowers resemble those of R. speciosa.

HARDY WATER LILIES.

Now that it is nearly time to prepare for planting aquatics, some of our readers may be interested in seeing a list of the possibilities in hardy water lilies.

Nymphaea odorata, the common wild variety of the east, is too well known to need description. Nymphaea odorata Caroliniana is a variety producing flowers of a delicate flesh color tinted with salmon. They are equally as fragrant as the white, and the plant blooms for a longer time.

Nymphaea Brakeleyi rosea.—This is a hybrid from the best form of N. tuberosa crossed with N. ordorata rosea. It is a very vigorous grower, increasing rapidly by branches from the main rhizome. The original plant produced leaves sixteen inches in diameter and flowers eight inches across. The latter are of a beautiful shade of pink, and possess the richest and most powerful fragrance of all hardy varieties, surpassing even N. ordorata in this respect. The plant flourishes in any rich soil, and is desirable for the water garden, or for deep water in natural ponds.

Nymphaea candidissima is a large-flowered form of the native water lily of England. Its waxy white flowers, six inches across, are of exquisite form, and are freely produced both early and late.

Nymphaea Marliacea carnea is a vigorous variety; flowers, soft flesh pink.

Nymphaea Marliacea rosea bears large fragrant flowers of a rich, deep pink color, and is one of the most desirable varieties.

Nymphaea Marliacea chromatella. A variety of free growth and easy culture, blooming from early spring till late autumn. Flowers lemon-yellow, with bright orange stamens. Leaves blotched with brown.

Nymphaea Robinsoni.—The large floating flowers of this French hybrid are of the most brilliant orange-red color, and quite as showy as the tropical varieties.

Nymphaea Aurora.—In their early stages, the flowers of this remarkable variety are of a beautiful copper-yellow color, similar to the rose "Beauty of Glazenwood," and later they change to deep orange-red.

Nymphaea Pygmaea.—From Siberia and China. This is the smallest-flowered species in cultivation, with white lemon-scented blossoms about the size of a silver half-dollar.

NO PERMANENT DESERTS.

Geological investigations prove that arid deserts are not permanent features of the earth's surface. The most level expanses have once formed part of the ocean bed, or great inland seas. The changes that have cut off these seas and created inland drainage areas, probably at the same time modified the rainfall of the locality. Excessive evaporation dried up the great lakes, leaving at present a series of receiving rivers that dwindle down by evaporation as they flow.

VALUE OF IRRIGATION.

The Louisiana and Texas rice industry affords practical illustration, on a large scale, of the results of irrigated farming. Acording to Secretary Wilson, the product increased from 179,919,293 pounds, in 1899, to 869,426,800 pounds in 1904. In 1899 Texas had 178 acres of rice; in 1904 it had 376,500 acres. All this is the result of artificial irrigation; the water being sometimes carried long distances in flumes.

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Florist—This is just the season when we do raise 'em. We've just put them up to $4 a dozen.

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Gray's Gardena Dewberry
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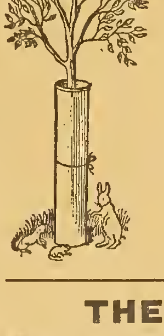

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As valuable in summer against sun-scald, hot winds, etc., as they are in winter against cold and rabbits. Recommended by all leading orchardists and horticultural societies.

Send for samples and testimonials. Do not wait till rabbits and mice ruin your trees. Write us today. Wholesale Nursery Catalogue now ready Write for copy. Agents wanted everywhere.

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Is cheap, durable and quickly put on the tree. It prevents Rabbits from destroying your trees. A sure protection against frost, sun-burn, grasshoppers or dry winds. can be easily removed; will last for years.

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18 inch long 12.50 per 1000
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Friday, April 6, 1906

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A Farmers' Movement.—In the Eighth Congressional District, in this state, a well-defined movement is quietly on foot to send a practical farmer and orchardist to Congress at the next election. The orange growers realize if they ever get any redress from the extortion of transportation companies, express companies and other public carriers, they must get that redress through the Congress of the United States.

They have borne the burden of high tariff so long, in the face of promises of relief, which have never materialized, that now they are in a frame of mind to endorse procrastination no longer.

The meeting of citrus growers. in Los Angeles, about three weeks ago, at which resolutions were passed endorsing the Freight Rate bill now before Congress, brought out a well-defined sentiment among the members, expressed privately, that the time is ripe for a general "shake up" of California Representation in Congress, to the end that a delegation may be secured which will have the interests of the farmers and fruit growers of the state at heart, and from whom prompt, aggressive action will be expected in the matter of relief from excessive freight rates on the commodities we produce.

One thing is certain, if the farmers do not look after their own interests, no one will do so for them. If they do not unite to protect themselves no one is going to volunteer to do so, hence it can not be wondered at that intelligent men, agriculturists of pronounced character and well-defined ideas of what their rights are, should be ready to combine in an effort to better their condition by electing men to serve them, in the Congress of the United States, who are with them on questions where their profits lay.

In some of the states of the middle west the farmers are uniting in a determined fight against the railroad and Standard Oil representatives in Congress, party ties are being obliterated, as such, and men are being sought who represent the agriculturists and cattle men and producers generally, There is coming a day, and it isn't far away, when the Congress of the United States must stand more for the people, the common people, and legislate in their interest, and less in the interest of the classes, or political parties as they exist in the present time will be wiped from the country. The masses are tired to death of the Senate of the United States. It has come to be a "gentleman's club," filled with nabobs, so far removed from the common people that it is regarded as an affront, by many of its members, to suggest even legislation which will better the condition of the toilers of the nation. The country isn't going to endure this fleecyism much longer. There is a well-defined sentiment already, throughout the nation, to call state conventions to pass resolutions for constitutional amendment doing away with that body. And if the present rate bill meets its death, or is rendered inoperative by reason of amendments made to it by the railroad representatives in the Senate, the indignation of the country will be at such height that the Senate obliteration order will become a most formidable measure.

So we are not at all surprised to learn that the people have begun to talk of a change of Congressmen in California. The idea is gaining strength, and we wonder not at the report which comes from Washington that there is uneasiness all along the line in the minds of those who represent the state in Congress. It is high time there should be getting down to the grass roots. The people are demanding it.

* * *

Will Congress Intervene?—Unfortunate indeed is the situation in the coal regions of the Middle West and the East. Negotations between the miners and the operators have been broken off, more than half a million men are idle and the ultimatum of higher wages or a long-continued strike has been made the war cry of the strikers.

The word has gone out that the supply of coal will barely last six months, and at the end of that period nearly all the great manufacturing plants of the country will have to suspend operations. It will readily be seen that industrial paralysis confronts the country unless the situation can be changed within the period named. With half a million men idle in the mines and three times that number idle in the industrial plants throughout the land, we shall see such a situation of hard times as we have not encountered in the last quarter of a century. With the shops and manufactories idle, the railroads impotent to haul cars, agricultural expansion curtailed by reason of inability to transport products to the markets, the outlook is clouded and dark. Both sides of the controversy have declared their resources at an end and the operators now say the only alternative is for Congress and the President to intervene and try and effect a compromise.

It is to be hoped the effort will be made and that it will be successful. So much is at issue, the ends justify almost any expediency to settle the difficulty.

* * *

The State Agricultural Society.—It seems again that discontent reigns in the management of the State Agricultural Society. Last week the Secretary was removed on the plea that a promotor is needed in that office. We are not interested in the controversy which exists in the Agricultural Society only as it affects the fair, we care nothing about the political complications existing except as they may have a bearing on the general results of the work of the Society. But it seems, the Society is dominated by politics more than by business, and this fact is disgusting the agriculturists of the state. There is a sentiment of hostility growing among the people to the methods heretofore employed in conducting the Annual State Exhibit. It savors too much of locality, they say, and not enough attention is paid to parts of the state laying remote from Sacramento. Whatever of merit rests in these complaints should be taken up and removed. The greatest good to the greatest number should be the aim of the management. If we are going to have a State Fair at all, let it be for the whole state—not for any particular section.

The date for holding the next State Fair has been fixed for August 25 to September 1 inclusive.

* * *

Fruit Exchanges Control Contracts.—A case of universal interest to fruit growers, members of an exchange has just been decided by the Superior Court of Los Angeles county. Last year Mrs. Williams, of Ontario, made a contract to dispose of her orange crop to the Pomona Fruit Exchange, thereby becoming a member of the exchange and being bound by its rules. Mrs Williams, it is alleged, sold her crop to outside parties, and the Pomona Exchange brought suit to recover 50c a box on all fruit sold, in accordance with the contract. The court awarded judgment against the defendant for the amount asked.

* * *

Buy the Best Seed.—The season is at hand when nearly every family will receive its usual supply of seed catalogs. Some will come from old reliable houses, while others are anything but reliable, thus making it difficult for the amateur gardener to select his seed, with the assurance that he is getting what he sends for. No matter how small the order, it should go to a thoroughly reliable seedsman, whose seed are sure to grow, under favorable conditions.

* * *

SIGN COMMUNICATIONS.

Again the Cultivator desires to call the attention of parties desiring questions answered through its columns, to the fact that all correspondence signed "Subscriber" will receive no attention by the editor. The full name must be signed to all questions, or any other matter of which notice is expected to be taken by the Cultivator in any of its departments.

Farmers' Institutes.

Carpenteria. April 24-25.
Fillmore, April 25-26.
Monrovia, April 27.
Upland, April 30, May 1.
Corona, May 2-3.
Anaheim, May 4-5.
Escondido, May 7-8.
El Cajon, May 7-8.
Chula Vista, May 11-12.

San Dimas Citrus Nurseries

Orange and Lemon Trees

Are the only kind of nursery stock we have grown for the past twenty years, and being the largest producers in the world we feel that we are in a position to render intending planters better service in the way of superior trees over all competitors. Our prices are right, considering quality.

Good Trees mean Good Profits

A poor tree is expensive as a gift, and an untrue-to-name plant an aggravation and waste of time, labor and money. When you plant an orange grove remember Davy Crocket's advice, "Be sure you are right, then go ahead."

We stand ready to prove to you that you will be right when planting our trees. Correspondence a pleasure, and our booklet on Citrus Culture is free.

R. M. Teague
PROPRIETOR
SAN DIMAS
CALIFORNIA.

NEWS OF COUNTRY LIFE IN THE GOLDEN WEST

HORTICULTURE.

Congress has been petitioned to provide $10,000 with which to fight pear blight in California.

Work on the Vacaville cannery will commence at once and the establishment will be ready to handle a goodly share of this season's crop of fruits and tomatoes.

The United Citrus Association paid to its members last week $3,058.71 as second payment on the February pool, making an average on all grades of navels of $2.24 per hundred for the month of February.

Observers about Monrovia have noted that the orange blossoms were not much opened during the recent storm. This fact supports the belief that the coming season's crop has not been damaged by the washing away of the pollen, as happened in the storm of a year ago.

There seems to be no limit to the price of good oranges in the East. On Saturday of last week one grower at Redlands was offered $8,000 for his crop of late Valencias on six and one-half acres, which he refused. Navels are being sold at from $2 to $2.60 per one hundred pounds.

George H. Cutter, Horticultural Commissioner for Sacramento County, reports that the recent rain did great injury to the fruit crop of that valley, especially to peaches. Mr. Cutter believes that the outlook for pears is fairly good, and that cherries will be fine, with fair prospects for plums, grapes and other varieties.

The Pomona Times tells of a temporary laboratory fitted up at Whittier for the purpose of finding a remedy for the walnut blight. Professor Ralph E. Smith of the department of plant pathology and an assistant, under the auspices of the State University College of Agriculture, are to be in charge.

The apricot crop in the Ventura County district has been damaged to such an extent that at least one-fourth of the crop will be ruined. The immediate cause is the cold wet weather which has caused the little cots forming on the trees to rot under the partial protection of the tiny leaves of the blossom. There is danger that this condition will be felt in the apricot sections generally causing a short crop.

C. M. Gifford of San Diego writes the Fallbrook Review that he has just finished the largest pack of canned olives in the history of his factory, and Ackerman & Tuffley of San Diego, packers of the "Old Mission" brand, write that the canning of olives has proved a veritable godsend to the growers, as large quantities of canned olives are being shipped East. San Diego County is one of the leading olive growing section of California.

The California Cannery Company at Fresno has announced itself prepared to sign contracts for the next 3 years on a basis of 3¼ cents, and is preparing to erect new and large packing houses at every shipping point in the valley. Some of the executive officers of the company are expected in Fresno this week to decide definitely upon the locations for these plants. And to make matters still more interesting, a circular has been issued announcing its ability to handle the raisin crop of the state.

Secretary G. N. Whitaker of the Sonoma County Horticultural Commission advises all fruit growers to give their trees a good shaking at the present time to throw off the canker worms and to protect the trees with tanglefoot. In this way and by spraying later he is confident there will be a much cleaner lot of fruit this year than for some time past, while several years of such treatment, he says, will result in a general cleansing of the orchards, which will redound to the financial benefit of the growers many times over.

AGRICULTURE.

The value of farm products, per capita, of California is greater than that of any state in the Union.

Last year a firm at Exeter realized a net profit of $5,000 from 35 acres of canteloupes grown near that town.

The agricultural experiment station at Berkeley has just issued a bulletin, No. 175, treating on tomato diseases in California.

The gardeners of Whittier have planted 300 acres to cabbages, which at the present price of $30 per ton will net gross returns about $72,000.

The abundance of rain and the cloudy days are turning the grain yellow in the country around Colusa. Two thousand acres of irrigated land are to be sown to alfalfa seed.

On Bouldin Island below Stockton there is located the largest asparagus bed in the world. It contains 3,000 acres and an average of 325 carloads of the canned product is shipped from there each year.

The Submarine of Coachella declares that "never before in the history of the valley has so plentiful a supply of vegetables fresh from local gardens been procurable. Until this year all vegetables were shipped in, just as hay was imported up to two years ago—without reason 'tis true, nor cause other than that our people were too busy with other matters to go in for an eenty-teenty truck patch. Today we find at the meat market fresh beets, carrots, radishes, turnips, cabbage, onions celery, etc., and our folks have all had so much fine lettuce for the last month that they have palled upon it."

LIVE STOCK.

The Plumas County ordinance taxing sheep ten cents a head has been declared invalid by the State supreme court.

Cattle and hogs are going forward to market now on nearly every train, says the Imperial Press. Several car loads of hogs and some of cattle went out during the past week.

Last year the Utah condensed milk factory in Cache Valley did a very satisfactory business. The gross receipts were over $200,000 of which $104,000 was paid to the farmers for milk and $30,000 was paid out in salaries.

The Iowa legislature has passed a bill in effect requiring hens to lay eggs of a certain weight. The bill specifies that eggs on the market must come up to a certain standard. It is charged that the dealers sift their eggs, selling large ones at fancy prices and working off smaller ones upon poorer purchasers. The idea of the bill is to remedy this injustice and give housewives what they are paying for.

The Alta Advocate is enthusiastic over the high grade horses being raised in Tulare County. In a recent issue it says: The horses that come to Dinuba from the country are above the average. Some of the specimens of equine beauty in the state are on our streets daily. The sturdy draft horse, the bright-eyed, clean-limbed racer and the practical and all purpose horse are among them. Good trotters and all around roadsters are in the list. And this year the young stallions that are in the Alta district are numerous. Many of them are imported and high priced, and we may look yearly for an increase in our breeds.

MISCELLANEOUS.

It is understood that the S. P. will soon commence the erection of a depot at Thermal.

The largest English walnut orchard in the United States, comprising nearly 1,000 acres, is in California.

California has some of the largest seed farms in the United States and furnishes about one-half the world's supply.

The Holtville brick plant is working to its fullest capacity at the present time and is now burning a kiln of 275,000 bricks.

The rainfall at Squirrel Inn for the present season to date, says the San Bernardino Sun, is 54.70 inches or almost five feet of water.

There are single fields of wheat or barley in California larger than the entire acreage to those products in the six New England States.

The Merchants' Association of Anaheim has requested the City Council to pass an ordinance excluding peddlers and fakirs from the city.

Henry Miller, the wealthy cattleman, has signified his intention of building an immense Sanitarium near Gilroy. It will cost about $100,000.

The Ukiah Times estimates the loss of the boundary line case at $100,000 for Mendocino county. It is all a grazing country, worth from $3 to $10 an acre.

The latest estimates place the damage of the rain flood in San Diego county at over $100,000. The damage to the streets of San Diego is estimated at about $12,000.

The Redlands Board of Trade has asked the San Bernardino County Supervisors to make an appropriation for forestry work to supplement that done by the government.

Japs in Pasadena have recently been killing many meadow larks mockingbirds, and other birds of song and plumage, to be eaten. The practice should be stopped.

Throughout the Middle West States reports are in existence that the Western Pacific Railroad wants 10,000 laborers to build its roadbed between Salt Lake City and San Francisco.

The United States Department of Agriculture has sent two men into Yolo County to investigate the methods employed by water users in that county.

Hardy Presswood of Guerneville jumped into Russian River one night last week and was drowned before the eyes of his brother and Deputy Sheriff Robert Garner.

A movement is on foot in Pasadena, under the direction of the Emergency League and Opportunity Club, to establish a permanent home for the treatment of tuberculosis victims who may come to Pasadena.

The Messenger says the almost unprecedented fall of rain in the vicinity of Highland brought ruin to some of the small orange groves which lie near the mouth of the mountain canyons, and will result in financial loss to the owners of those groves.

LINER ADVERTISING

Advertisements in Liner Column will be charged 1¼ cents per word. No advertisement taken for less than 25 cents. Eight words to a line.

LINERS

MAMMOUTH PEKIN DUCK EGGS, FINE Strain, 13 for 75c. Miss Wood, 130 Carey St., near Arroyo Drive, Pasadena, Cal.

ANCONA EGGS (FROM PERPETUAL EGG Machines), imported and domestic matings, $2, $3.50 and $5.00. L. L. Viereck, Pres. Ancona Club, Albany, Oregon.

FOR SALE—SEVEN WHITE ROCK HENS. "Basley Strain", $1.25 each. First green cottage west of pumping plant on Moore Ave. W. A. Barnard, Tropico, Cal.

FOR SALE CHEAP, 25 H. P. HOADLEY Portable Steam Engine. New boiler rigged for oil. Everything in first class condition. Enterprise Mfg. Co. San Jose, Cal.

BLUE ANDALUSIAN EGGS FOR HATCHING, from three noted strains, $2.50 and $3. Incubator lots $7.50 to $15.00 per 100. Mrs. T. R. Griffith, 3111 Walton avenue, Los Angeles.

FOR SALE, THOROUGHBRED, AND from prize winning Stock, Barred Rocks and White Leghorn Chickens, also eggs for hatching. Mrs. Ossina Low, Glendale, Cal. 'Phone 663.

WANTED—SITUATION BY MARRIED man who understands culture of deciduous and citrus fruits. Good horseman, pruner and irrigator. Address "Orchardist." Care of Cultivator.

FRUIT CANNING MACHINERY FOR the Ranch or Factory, 6 sizes, $10 to $125. All appliances, highest award by U. S. Trades Report. Address, W. H. Ritchie, Pacific Coast General Agent.

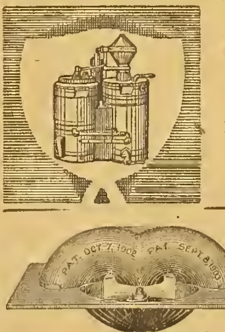
COLUMBIAN WYANDOTTE EGGS FROM winners; first ckl.; first pullet, New York; first, second, fourth, and sixth pullet; fifth cock at Boston. Eggs from $2.00 to $5.00 sitting. Send for circular. Prof. John Evans & Son, Meshanticut, R. I.

FOR SALE—WHITE MINORCAS EGGS $1.50 sitting from one of the nicest pens of Wh. Minorcas in Southern California. Lay the most eggs and the largest whitest eggs of any breed. Call and see them at 547 W 54 St., or address 1004 E. 9th St. Also incubator chicks for sale.

Edison Phonographs and Records at factory prices, delivered free anywhere on receipt of full retail price; largest stock of Edison records west of Rockies; send for circulars. Peter Bacigalupi, 786 Mission St. San Francisco

RANCHES WANTED For Our Clients

Burr-Paddon Co, 40 Montgomery St., San Francisco



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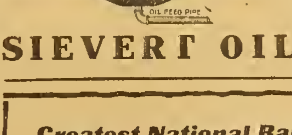

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Live Stock and the Dairy

BY MRS. MINNA E. SHERMAN, FRESNO, CAL.

SILOS.

The desirability of silos in California is best known to the dairyman. Others are apt to think that having no cold winter there can be no need to store food; but I have found from personal experience that we have August to the time that grass grows green and strong when there is an interval that nothing fills so well as silage. This period often lasts several months and the cows shrink in milk from want of succulent food. It is expensive to grow corn and cut it before it reaches its best to feed green to cattle. A crew of men and a cutter put the corn into the silo with economy, for it is then under the constant supervision of a foreman; while, if a couple of men are sent away down the field to cut corn for the cows they listen to the birds sing or talk politics—when the forty or fifty minutes wasted on each load comes to be counted up, it is found that the silage costs too much money. The time paid for is added to the expense account and is an absolute loss, as it cannot be picked up again. If I could only convince all the farmers that the time of men is money, and that without work being under constant supervision the labor expense on everything eats quickly into the profits I would confer on them a great boon. I have seen men who handle themselves so well they are cheaper at $40 a month than others at $30. The money invested in good men is well invested, as also is the money invested in a good silo.

The Modern Silo.

* * *

On the tenant farms of England and of Germany, where the tenant loses his improvements at the end of the term of his lease, a modified form of silo, a stack silo, has taken the place of the building. A heavy timber is laid on the ground and on it the stack is built up as solidly as possible; after it is up a rope is passed around the bottom and then six scantlings are stood up on end; at the top these are again tied with a heavy rope and now the irregularities are cut from the side and piled on top and tramped in. At the top a slat roof is nailed together of six-inch boards to heavy beams, across this is placed a heavy timber, lying loose or unnailed, and from this heavy wires or chains hang to the ground. Into the loops of this chain the end of another timber is passed and the short end of this is fastened to a clevis driven into the timber under the stack; the long end of the lever is weighted heavily, both sides of the stack are fixed with this leverage and the pressure is continuous. The foreign authorities claim that there is only ten per cent of waste in the stack, but in Wisconsin, at the experiment station, it is claimed that there was nearly thirty-five per cent of loss.

I have only tried this form of packing with green sorghum and then I had between every two feet of sorghum six inches of short wheat straw and stack waste. It was in the field and the cattle were allowed to eat at one end of it while they were fenced away from the others. The waste could not be counted, but it was eaten clean, but then the youngsters will eat everything dry when the grass is very young; they are so glad to have something that does not make their mouth so tender or set their teeth on edge.

The first silo built at the ranch is sixteen feet by thirty-two and has been in use fourteen years. It has not had any repair to date, but I think will have to be relined next season. This silo stands on a brick foundation, six bricks deep and two wide; the bricks are laid in Portland cement and are placed in a trench ten inches below the surface, the earth removed from the trench being banked against it so as to make it lower in the center; this relieves a little of the strain of the walls. The corners of the two square pits of this silo are cut across by putting a timber across them and the lining is inside of this; two of the corners, one in each pit, are left enough larger to make chutes for the silage to be thrown down into the wagons.

* * *

As the details other than those given here are the same as the round silo, and as that is the best form, we will pass on to that in the description of the building. After the circular brick wall is completed it remains a matter of local conditions as to whether the silo has a cement floor or not. On well drained soil where rats do not abound, there seems to be no need of having one, at least I have not found that one was needed in either of my silos. If one is used it should be placed above the surface soil by filling for it and a tile drain laid under it to carry off the surplus water that will collect from the silage. The silos are cut from two by eights and are angled to fit them to the top of the bricks, but not shaped to the curve. These are set into and also to the upright scantling, toenailed after made level by bedding them in mortar. In a silo thirty-five feet in diameter the studdings are two by fours; these are sixteen feet long and are lapped to nail two and a half feet. This makes the silo about thirty feet to the plates. The plates are cut like the sills and, indeed, it is well to cut them all at the same time. After the studding are up and plumb they are nailed to the sills and rough six inches wide, half-inch thick boards are nailed around and around until the top is reached. This lumber must be of uniform width and fitted closely together; heavy tarred paper is then placed over it, lapping all joints, then another layer of these boards, then more tarred paper and the tongue and grooved narrow board planned on one side. If the first rough lumber has the first boards split lengthways to half the regular width, then the next regular width, when the second lining comes to be put on the joints are sure to be broken. The outside of the studding is now covered with house rustic around and around. At the top and bottom of this rustic, holes are bored between each studding to let in the air to dry out any moisture that might accumulate. The roof has a dormer window through which to fill the silo. When the first lining boards are being placed in the silo, when they reach the heights desired for the first door, the studdings are cut and the pieces removed are nailed at the top and bottom of the windows; the lining boards are carried across the opening only they are nailed carefully along the length of the top and bottom; after the lining is finished the three thicknesses are sawed through and the door is hinged. The lining is hung so as to open inward and the one in the rustic opens outwardly. When the silo is being filled, as soon as the doors are reached the outside is fastened and the cracks are covered with tarred paper and then the inner one is closed and two thicknesses of tarred paper is nailed over the opening or cracks.

It is a little hard to calculate the number of feet of silage the round silo holds, but the following tonnage is usually accepted as correct: A round silo, twenty feet in diameter and fifteen feet deep, will hold fifty-nine tons; while a silo thirty-two feet deep and twenty-six feet in diameter will hold three hundred and forty-six tons of silage. With size, the compression of that at the bottom is so

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More truly is the best the cheapest in the purchase of a cream separator than in the purchase of any other farm machine. The really cheap cream separator is the one which will perform your work in the most profitable and satisfactory manner, and last the greatest number of years. Basing the value of the separator upon durability, without considering quality of work, if it lasts but two years it is worth only one-fifth of what the separator is that lasts ten years, and one-tenth of what the one is that lasts twenty years. In addition, if it loses a large percentage of cream and is difficult and expensive to operate its value is placed at even a still lower level. **DE LAVAL** cream separators are today admitted by every experienced user to do as near perfect work as a cream separator possibly can. Proof of this is seen in the fact that over 98 per cent of the world's creameries and all largest users employ the **DE LAVAL** exclusively. As to durability, the **DE LAVAL** has an average life of twenty years. The very best of other separators do not last over eight or ten years at the very longest, and the poorest generally become worthless in from six months to two years. At the same time these machines are incapable of doing perfect work except under ideal conditions, such as cannot possibly be had in farm use—otherwise they lose a large percentage of the cream, are hard to operate, and in reality are but little better than gravity setting systems. It is therefore seen how little the first cost of a cream separator really means. The cost in the end is what counts. All in all considering dollar for dollar value, a **DE LAVAL** machine gives from five to ten times more true separator worth than any other machine on the market today. These are not mere paper claims but facts, proof of which can be had for the asking.

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much greater that the weight increases rapidly.

Now as to cost: It varies all the way from $1 to $2.50 a ton capacity, and the only way to reach it is to make up the bill of lumber and find what it costs at your home. Then it also depends upon whether union wages have to be paid or if there are job carpenters in the neighborhood that work cheaper. The stave silo is good form and many are being built, but then they must be carefully looked after when empty. Those at Dos Pelos are now being used for three years. In the East they are usually built inside of the barns so that they are not exposed to the direct rays of the sun. Stone, brick and groute silos are all bulit. but except in some favored parts of the state the wooden silo is the cheapest.

The standard book on silo building is by F. W. Woll, professor at Wisconsin University, and is published by Rand, McNally Co., Chicago. There is also a brief bulletin published by the Department of Agriculture at Washington. If you are going to build in California it is well to submit the bill of lumber to some city lumber dealer and have the material sent in to you in carload lots of the proper lengths. Whenever it does not come out an even carload of building stuff I have either bridge planks or Redwood stakes. The neighbors are glad to buy any you may not need as they are cheaper than the local rates.

Economic buying is money saved every time and where there is not co-operation among the neighbors it pays to co-operate all alone with yourself against local exactions. The city wholesale man is always glad to recognize the cash buyer in the country.

Advertising Column for Members
OF THE
JERSEY BREEDERS ASSOCIATION
OF SOUTHERN CALIFORNIA

Organized for the general advancement of Jersey interests, to extend knowledge of their superior merits, for the mutual benefit of members, and to increase the profitableness of one of the State's greatest industries. Breeders are requested to unite with the Association.

BULL FOR SALE

Having sold my ranch I am forced to sell Golden of Biltmore. 6008?, a grandson of Golden Lad's. Golden of Biltmore is one of the best, ***If not the best*** sire on the coast. several of his danghters less than two vears old selling for over $200 each. Highest bidder for next sixty days takes him. If everything is not just as represented, I will give anyone the ***bull free of charge. I sell on merit.***

C. S. Burgess, Riverside, Cal.

Pure St. Lambert Bull
—ST. LAMBERT OF RAMONA, No. 62633,—
heads the Ramona Herd of Registered Jerseys of
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Have moved their herd of Jerseys from San Bernardino, Cal., to the famous Imperial Valley, and hereafter their post office address will be Heber, San Diego Co., Cal., from which they will conduct all their business. Abundant green feed every day in the year will be of great advantage in the best development of our young stock.

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Service bull "SARGENT FOX," 64833. Bred on the Island of Jersey. Sire, the great Flying Fox, that sold at auction for $7,500. Dam, Miss Sargent, reserve winner over Jersey; winner of seven first prizes and five championship cups. "One of the grandest cows the island has ever produced."

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For Sale, yearling bull Ruth's Gordon King, No. 72360 A. J. C. C. He is of richest breeding on both sire and dam's sides. Also three richly bred heifer calves by Marigold's Exile King, from cows that are good yearly producers. For particulars write

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Oakhurst Jerseys

Sons of imported Golden Marquis out of prize winning and tested dams. for sale.

L. Bradbury Duarte, Cal.

Kings Victor King of St. Lambert

At head of herd. Young stock for sale.

H. N. WILLIAMS COMPTON, CAL.

HOW TO MANAGE A HERD OF DISEASED COWS.

The tuberculin test is very reliable—that is to say, that in a large percentage of cases. when the proper precautions are taken and good, fresh tuberculin in correct quantity is used, and no errors are made in the readings of the thermometers, it indicates the animals that are free and those that are tuberculous; but it does not give any hint as to the degree to which the disease exists in those that react. For instance, two animals may show practically the same temperatures, yet on post mortem one may show only a few small growths, while the other is generally affected and in some parts large masses of growths are discovered.

As to whether it is wise to kill all that react, if you refer to general practice, I answer emphatically, no. There are in certain herds circumstances that warrant this—e. g., if a man has fifty head and five react, and there is no special reason to demand the saving of one or more highly valuable animals on account of their breeding value, it would often be wise to clean out the five and use for beef any not physically bad. This would rid the herd of the animals believed to be infected; then it would be necessary to disinfect as thoroughly as practicable, look out for new cases and retest the herd in about nine months.

On the other hand, if one has a herd of fifty head and thirty or more react, it will as a rule be found that the great majority of diseased animals are the working factors in the herd (the mature cows), while the non-reacting animals are mostly calves and yearlings. Thus if all that react are killed, the dairy products are nearly or entirely cut off, and all that are left will be a bill of expense for some months and more or less for two years. In such cases as this, it behooves the owner to weigh well all the facts and conditions that surround him. If the herd is a good one, even grades or common cows, he can kill from time to time any that run down and that are physically bad; separate the healthy from the diseased, putting the non-affected in new quarters; feed calves only on milk from the latter, and take calves from infected cows as soon as born to the quarters where non-infected animals are kept. Animals that are fit for beef could be killed, and the proceeds spent in the purchase of new cows, which should be bought subject to the tuberculin test, etc. In this way business can go on and a new herd be built up.

In New York state for some years prior to 1899, when I took my stand against the then universal opinion that bovine and human tuberculosis were identical, the law demanded that all reacting cattle be killed, but since that time the most violent advocates of that method have been obliged to modify their views, inasmuch as it was pointed out that the indiscriminate slaughter of all known tuberculous cattle was a proceeling born of ignorance, its provisions were not possible of attainment, and its advocates were unable to show, after several years of wholesale slaughter at the cost of millions of dollars, that they had accomplished anything whatever. Nor could they point to a single county or state that had been freed of bovine tuberculosis. We cannot stop rivers running to the sea, but we may guide them and control them to be a considerable degree.—Dr. Edward Moore in Country Gentlemen.

ALFALFA PASTURE.

California Cultivator—I have about 1500 pigs and hogs on 100 acres alfalfa and I want to ask a question. Will it hurt alfalfa when there is a fine stand, to keep it eaten down with hogs the year around, or should it be allowed to head and cut for hay?

W. B., Holtville.

It is not best for your alfalfa fields **to keep them eaten clean down to the roots by hogs.** Alfalfa is much like clover, it needs to rest and to be allowed to gather strength. Better fence off the 100 acres into 40-acre pastures and run the hogs in one 40 at a time, giving the alfalfa time to rest and to strengthen. So large a bunch of hogs running continuously on your alfalfa will be apt to injure it in time.

FEEDING THE COW.

Editor Cultivator: Will you please inform me as to feeding a cow for butter. I am a novice in feeding and have a fine Jersey cow and would like to try her out.

Feed plenty of alfalfa hay, bran and shorts, in the proportion of two to one, twice a day, about four quarts to a feed, salt once a week. Feed, water and milk at regular hours. Be gentle when handling your cow and she will well repay your kindness.

The U. S. Department of Agriculture estimates the number of milch cows in the United States on January 1, 1906, at 19,793,866. Of these California is credited with 390,015.

The reports obtained show that California made in 1905 the large quantity of 42,000,000 pounds of butter.

One of the best ways to wash milk utensils is with tepid warm water in which a little soda has been dissolved, then apply scalding hot water, rinse dry and give a good sun bath.

RECORDS OF DAIRY COWS.

No one thing connected with dairying has received more attention recently than that of ascertaining what dairy cows give in return for their food and care. The carefully kept records of experiment stations and the records of hundreds of the most successful dairymen have proven that milch cows vary even more in the amount of return they give for the food they consume than had been claimed by the advocates of special-purpose dairy cows. There has been a great advance made in keeping records of the yield of each cow in a herd to the great financial benefit of those who keep such records.

A man looking for a profitable cow should always keep in mind the fact that it takes from one-third to one-half of all the feed a cow eats to maintain her body, and if there is a surplus amount of body to maintain the profits will be correspondingly less. This does not imply that the small cows should be selected, but that those with small udders and large bodies are not, as a rule, good milk producers.—The Ranch.

Skim milk and buttermilk have about the same feeding value. It has more value for growing hogs than it does for fat production. Feed one pound of grain to three or four pounds of skim or buttermilk to growing hogs.

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When you see the waist low Tubular you can't be driven into buying a back-breaking, "bucket bowl" separator. **Can and crank are just the right height on the Tubular.** Here is the largest Dairy Tubular along side four "back breakers." The girl with her hand on the Tubular is 5 feet, 4 inches tall. This is an exact reproduction from a photograph. **Which kind for you?** Makers of "back breakers" try to get their cans low by setting the cranks low. **High cans** break your back backward—**low cranks** break it forward. Unless you are a double jointed giant, you'll find a high can is no joke. To show you how high these "back breaker" cans really are, when the machines are set high enough to turn easily, we raised these "back breakers" 'til their crank axles were level with the Tubular crank axle. "Back breaker" makers don't like this picture—**it's too true.** They try to squirm out of it. **You wouldn't like turning cranks as low as "back breaker" makers put them.**

The low can is only one of many advantages Dairy Tubulars have over all others. Dairy Tubular bowls are simple--"back breakers" are complicated. Tubulars are self-oiling--no oil holes to fill up. "Back breakers" are oil drippers and oil wasters. To learn a lot more about Tubulars, write today for catalog N-260

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Profit in the Poultry Yard

BY MRS. A. BASLEY, HOLLYWOOD, CAL.

QUESTIONS AT THE FARMERS' INSTITUTES.

I have been out at the Farmers' Institutes during the past week, and besides talking on my favorite subject of poultry, (I really have been a poultry crank all my life), I have been greatly interested in hearing others talk on the subjects of the greatest moment to farmers, and in fact to the whole nation.

It is by learning of the discoveries of others, by hearing of the experiments. of the analysis of soils, by comparing the old and the new way of farming in all branches of the work, that improvements are made. We can take what we hear at these institutes and use the knowledge thus gained to benefit ourselves, use other people's brains and other people's experiments to save our own.

"Experience teaches," but her lessons are very costly, and these institutes at which we are taught from the experiences and experiments of others, will save us many, many dollars; will make our work more and more interesting; will teach us the best and cheapest way of getting the finest results, keeping us up-to-date and a-breast of the times.

In traveling to these institutes I have been greatly pleased to see on many of the ranches, beautiful flocks of fowls well cared for and in good healthy condition. The improvement in these flocks is very marked and the henneries, brooder houses and appliances all show signs of thrift and prosperity very pleasing to note.

After each paper questions are asked and the topic is thoroughly discussed.

The questions at the recent institute were often very interesting. Trap nests and how to manage them, how many trap nests would be required in a flock, and many such questions. The answer to this was that one trap nest to three hens is quite sufficient. With this number the nests need only be visited twice in the morning.

Among other questions are the following:

First—Is it your opinion that the Leghorn breeds are more apt to catch cold and more affected in egg production, by stormy weather than other varieties? No, the Leghorns are quite as healthy as any variety, but all fowls feel a change in the weather, and when chilly or rainy weather comes suddenly, the egg basket quickly shows the effect. If I only have a few fowls to offset the chilly rain I give them a warm supper and add a little pepper to it.

Second—Are White Leghorns more delicate than the other varieties of Leghorns? No. They are just as hardy as any, but the offspring of any ickly hens, or hens that have had croup or any serious malady, have weak constitutions and are very apt to be taken ill just at the same time of year in which their parents were ill. All varieties of Leghorns are equally hardy and all are good layers. Some people prefer the brown or lack, because they think hawks and other marauders do not see them as quickly as the white fowls. Peronally, I have not found this to be he case.

Third—Do you consider Barred Rocks or Orpingtons better winter ayers than Leghorns? If the weather is cold the Rocks and Orpingtons lay better, but early hatched Leghorn pullets. properly fed, canot be surpassed as layers. In the econd year the Plymouth Rocks will outlay the Leghorns.

Fourth—Which would you recommend as as all-round utility fowls, the Barred Rocks or the Buff Orpington? They both belong to the "utility" reeds. They are both good winter ayers, if properly fed, and I should ecommend you to raise whichever reed you like the best. Choosing ggs for hatching from parents that re good winter and fall layers, and he following year keeping the eggs rom hens that laid early and well in their pullet year.

Close culling and careful selection, choosing only the eggs from the very best are the rules for building up a flock of fine layers.

All the Orpingtons have the white meat and skin, the Buffs and White have pinkish white shanks. The Orpingtons are a little larger than our American breeds. They lay brown eggs like Plymouth Rocks in size, hape and color.

Whatever breed you decide to eep, keep only that and learn that reed. Study its characteristics, find out and rectify its defects, encourage nd develop its good qualities There is no possible way to judge of the intelligence and disposition o birds, save by our personal experience ith them," are the words of a bird over. Gene Stratton Porter.

ntimate acquaintance with your hens will, or ought to, develop mu-

BRO Z TURK

rt's strain. Winners of five firsts at Lo geles Show, '06, and always winners whereve hibited. Write for prices.
Ed. Hart. Clements Cal.

INGLE COMB WHITE LEGHORNS
Thorough-bred Stock. Eggs. $1.50 per 15
INDIAN RUNNER DUCKS
Eggs. 1.50 per 12
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Easy, quick and certain riddance of vermin on poultry and animals.
"I have used the Prussian Lice Killer on my chickens and it is certainly the best I ever used. It is easily applied and it does its work in great shape. I will say to my fellow poultry keepers that they will save time and trouble by using Prussian Lice Killer.
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½ Gallon 50c. 1 Gallon $1.00.

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The dust method. Sure death to lice, no injury to birds or animals.
"I used a 25c package of the Prussian Lice Powder on 16 head of lousy cattle, and the day after could not find a louse. I consider it the best thing I ever saw." H. V. Spafford, Kelso, N.D.
In 25c and 50c Packages.

Prussian Poultry Food
Guaranteed to produce healthy fowls, more rapid growth, make better layers and to ward off and cure Roup, Gapes, Cholera, etc.
"We have used Prussian Poultry Food for more than two years with great success. We find that it is the proper food for young chicks and just the thing to keep up laying hens."
Arnold Jungman, Poultry Yds, Gladstone, Minn.
In 25c and 50c Pkgs. 25 lb. Pail, $3.50.
"Poultry Profits," 36 pages, to poultrymen free, if you write us what stock you own.
Prussian Remedy Co., St. Paul, Minn.
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Buff Wyandottes
Eggs from pens mated with 2nd prize Cockerel or 2nd prize Pen L. A. Show, $2.50 per 15. Stock and yards at San Gabriel. **Wm. J. Bodger, 251 S. Main St., Los Angeles, Cal.**

Blue Andalusians
From prize winning and egg producing strains. Eggs, $1.50 and $2.00 per 15; incubator lots, $6.50 per hundred.
C. E. Chittick, 124 Avenue 34, Los Angeles, al.

Buff Plymouth Rocks
A few fine cockerels $2.00 to $4.00 each. Eggs, $2.00 for 15. Very choicé Eastern stock.
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Brown and White Leghorns
Prize winners at L. A. Show, '06. Eggs from good laying strains. Eggs, special matings, per 15, $2.00. Incubator lots, $6.00 per 100.
Hemet Poultry Yards, Hemet, Cal.

THOROUGHBRED YOUNG CHICKS
White Leghorns, 10c.
White Ply. Rocks. 12½c.
Wm. A. GREEN, Box 401, ANAHEIM, CAL.

Blue Andalusians
At Los Angeles, 1906, our strain in a class of 68 Audalusians with 16 birds won more firsts than all our competitors combined. Eggs, $2.50 and $3.00 per 14.
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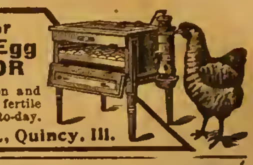
White Minorca and Buff Orpinton Eggs
$1 per 13, $1.75 per 26.
Indian Runner Duck Eggs, 65c per 12, $4 per 100. All healthy and standard bred stock.
H. C. Boyer - ***Toluca, Cal.***

Brown Leghorn and White Rock Eggs
For Sale, $1 per 15, also two fine White Rock Cockerels at $2 each.
Willis F. Wiesmore, 835 High Ave., Redlands, Cal.

Eggs from World's Fair Buff Leghorns $3 per 13, $7.50 per 100, $5 per 50. Commissioners' Cup for best display California bred poultry at Lewis and Clark Exposition. ***Barred Rock*** eggs, $1.50 per 13. ***LINDGREN BROS., Kingsburg, Cal.***



$12.80 For 200 Egg INCUBATOR
Perfect in construction and action. Hatches every fertile egg. Write for catalog to-day.
GEO. H. STAHL, Quincy, Ill.

WHITE MINORCA EGGS
Best of Stock. Great Layers.
$1.50 setting, $8 100, $65 1000.
S. W. MORGAN,
Sunnyside, San Diego Co., Cal.

Single Comb White Leghorns
Winners of the Dodge Sweeney Cup
Best display White Leghorn in Sonoma County at San Francisco Exposition, 1905,
1st pen, $5.00 per setting; 2nd pen, $3.00 per setting. Eggs from free Range 5 cents above Chronicle quotations. Stock for sale.
A. H. M Davies, Western Ave, Petaluma, Cal

S. C. WHITE LEGHORNS
I can furnish you with first-class eggs that will hatch strong, vigorous chicks, and give you satisfaction. $2.00 per 15, or $7.00 per hundred. Stock for sale. All eggs and stock purchased of me shall give perfect satisfaction. I make this a point.
Monte Vista Poultry Farm
L. D. Pettit, Mgr. ***Corning, Cal.***

WHITE WYANDOTTES
200-250 Egg Fowls **16 Prizes San Francisco**
Scored by T. E. Orr, eminent Eastern Judge. Our "Cream of the Coast" White Wyandottes swept the deck at San Francisco. Unsurpassed as layers and as exhibition birds.
Beautiful Circular Free, giving pictures of our prize winners, description of our matings and prices. Settings and Incubator Lots; Pens and Cockerels.
Eggs, $2.00, $3 00 and $5 00 per 15. Per 100, $7.00, $10.00 and $15.00. Clear eggs replaced. **We prepay express.**
CAPITOL AVENUE POULTRY FARM
A. L. R. MANTZ ***Rural 21, Box 98k*** ***SAN JOSE, CAL.***

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK
BUYS THE WORLD'S FAMOUS EGG FOOD NO. 4
MIDLAND
IF YOU WANT EGGS YOU WILL FEED NO OTHER
Used by all the largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders
The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the **GOLD MEDAL** at the St. Louis World's Fair for greatest hatch, with 40 different makes of incubators in competition. How's that?
St. Louis, Mo., Dec. 8th, 1604.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A FILCHER, Commissioner.
And Now Comes New Reward for Merit:
Read the following telegram received from the Lewis & Clark Exposition at Portland:
"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."
WRITE FOR CATALOGUE 47—A BEAUTY
PETALUMA INCUBATOR CO.
Main Office and Factory, Petaloma, Cal., Box F. Los Angeles, 505 South Main Street
San Francisco Office and Salesroom, 33 Market St.

SHADE'S **Rhode Island . : . Red Farm**

Automatic Chicken Feeders.
Shade's Egg Food sold to consumers only.
San Bernardino, - - California.

Silver Spangled Hamburgs—Eggs for sale. Vigorous stock, eggs sure hatch. Pullets ten months old have laid 100 eggs and still laying. Los Angeles Sunset 'phone Flora 2209. Pasadena Sunset Suburban 185. Arroyo Verde Springs, Pasadena Avenue, main road, near Ostrich Farm, South Pasadena, California.

Chickens and Eggs

Having handled Poultry in this market for the past thirty years, we can give you the best results and prompt returns.

D. E. Allison & Co., Inc.
119-123 Washington St., San Francisco

White Wyandottes

Eggs for hatching from 5 pens of standard birds. 1st Cock, 1906 L. A. Show and other prize winners. $10 per 100, settings, $1.50, fertility guaranteed. Special matings and stock a matter of correspondence. ***Mt. Holly Poultry Yards,*** E. W. Preston, Prop., ***Hollywood, Cal.*** Sunset Phone, Hollywood, 901.

EGGS FOR HATCHING
from a heavy-laying strain of
SINGLE COMB WHITE LEGHORNS
I guarantee 100% fertile. Write for prices.
Golden State Poultry Yards, Lordsburg, Cal.
T. E. Mills, Prop. Home Phone 1720

SONOMA-AMERICAN INCUBATOR
Send for large circular fully describing these machines.
Sonoma-American Incubator Co., - Petaluma, Cal.

Eggs Wanted for Hatching

Our big adobe incubator brings the best results. Send us your eggs and we will return the chickens. Young Chickens and Turkeys Wanted.

Bamboo Poultry Ranch - Glendale, Cal.
AIKEN & CO., PROPRIETORS

BARRED ROCKS
EXCLUSIVELY
Send for 16-page 1905 Catalogue
H. R. CAMPBELL
Box O PETALUMA, CAL.

Mountain View Poultry Ranch

S. C. White Leghorns—Heavy layers. Eggs, $1.50 per 15, $5.00 per 100.
Indian Runner Ducks Males for sale. Eggs, $1.00 per 13, $3.00 per 50, $5.00 per 100.
Mrs. J. L. Updyke - Fullerton, Cal.
Successor to Jacob Kreger

Rose Comb White Leghorns
High Grade Buff Orpingtons
Varian's Poultry Yards
P. O. Box 666. Home Telephone 1886
895 N. Catalina Ave., PASADENA, CAL.

High Grade **S. C. Rhode Island Reds White Plymouth Rocks and Buff Leghorns**

All new matings this season. Some of the breeds personally selected by the owner in the east last fall. Strong hardy stock, bred to lay and to win. Our Reds won at San Francisco, San Diego and Los Angeles shows. Best eggs $2.00 for 15, $5.00 for 50. From good utility matings $1.00 for 15, $3.00 for 50

Lake Avenue Poultry Yards
757 N. Lake Avenue - Pasadena, Cal.

Little Chicks Just from the incubator of the following varieties and prices:

White and Silver-Laced Wyandottes
$12.00 per 100
White and Barred Plymouth Rocks
$10.00 per 100
Black Minorcas **$8.00 per 100** | **White Leghorns** **$7.00 per 100**

These are all from first class stock none better at the above price. We guarantee safe delivery anywhere we can reach within 72 hours of San Jose.

J. S. SMITH,
Box 526 SAN JOSE, CAL.
Hatchery—450 W. Santa Clara St.

tual confidence and make them tame, and tame hens will be much more profitable than wild, nervous, unsociable hens.

A flock of pure blood fowls, all alike in shape and color, is a beautiful sight. When I was at San Jacinto last week I was much delighted with Mr. O. S. Hoffman's plant of Buff Wyandottes. He took many prizes at our Los Angeles poultry show and it was a pleasure to me to see his twelve pens of beautiful buff breeders. on the green alfalfa; every pen alike, every house like its neighbor; all built on a sanitary plan, so that there are no sick chickens. His youngsters are pictures of vigor and activity. I have asked him to give me the size and plans of his houses for they are inexpensive and very satisfactory. He kindly promised to let me have them for the use of our readers. What impressed me on Mr. Hoffman's place was, not only the beauty and vigor of his fowls, but the almost military precision of the arrangement of his houses and pens. All in line, all exactly alike. He is handy with tools, makes his own hoppers, is using the dry feed method, with excellent results and is making a success of the poultry business.

EDITOR'S QUESTION BOX.

Feeding. (A. B., Santa Ana.) In a recent issue you refer to the necessity of feeding different breeds, different rations. Will you kindly state what you consider a proper ration for Leghorns; also for Plymouth Rocks. Both having a free alfalfa range.

Do you consider a chicken can be fed for $1 or $1.25 per year at the price of grain in this country?

Do you think it advisable to force the chickens to moult all about the same time, so if possible, to start them laying as soon as possible?

Answer.—Leghorns being light, active, nervous fowls do best when they can have food which is so balanced as to give them more heat, energy and fat than the American breeds require. Consequently it has been proved that a wide ration of the nutritive value of 1.5 or even 1.6, will promote egg-laying among them.

With a ration as wide as that, the tendency of Plymouth Rocks would be for the surplus food to turn into fat instead of eggs, therefore the ration of 1.4 for them gives the best results.

I do not know what your cheapest available foods are, but if you consult the Farmers Bulletin, 164, on poultry feeding, (write to the University of California, Berkeley, for it), you will see the nutritive value of all the foods and can balance your rations perfectly.

A hen can be fed for $1.25 in Los Angeles, per year. I myself did this.

I do not think it advisable to have all the hens moult at the same time, because I want eggs, and fertile eggs all through the season. I found it best to assist the moult and have an early moult with part of my flock.

* * *

Water Glass. (H. K., Corning.) Will you tell me how much water it takes to the gallon of water to keep eggs? What temperature should they be? Will eggs preserved in water glass keep and sell as well as if they are in cases and cold storage? What sort of barrel is best? Will whisky or molasses barrels do?

Should the little or big end of the egg lie up?

Banning Poultry Yards
Wanted—To Exchange, 20 Barred Rock hens and 2 Barred Rock cockerels for same No. S. C. Wh. Leghorn hens and cockerels. Correspondence solicited. **Morris Bros., Banning, Cal.**

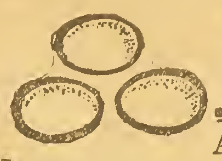
Indian Runner Ducks
Eggs for hatching from fine, healthy, thoroughbred stock. Egg, 75c per 13. **M. T. Taylor, 256 N. Eastlake Ave., Los Angeles, Cal.**

White and Buff Wyandottes
Prize-Winning, Egg-Laying, Wealth-Producing Strain.
M. E. DILLINGHAM, SAN GABRIEL, CAL.

White Plymouth Rocks
First class stock. Eggs, $1.00 per 13, $2.00 per 30. Indian Runner Ducks—$1.00 per 15, $2.00 per 33. A few ducks for sale. **H. S. Thompson, 125 W. Avenue 54, Los Angeles, Cal.**

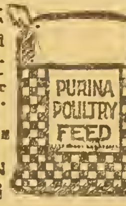
$8.00 COCHINS $8.00
A Trio—Buff, Black or White
Send for circular, giving undefeated show records. These are the best winter layers, finest table fowls, and by far the most healthy and hardy. Eggs, $2.00 per setting of 15. Prize winners, Eggs, $3.
HARRY McINTIRE,
SAN DIEGO. - - - CALIFORNIA.

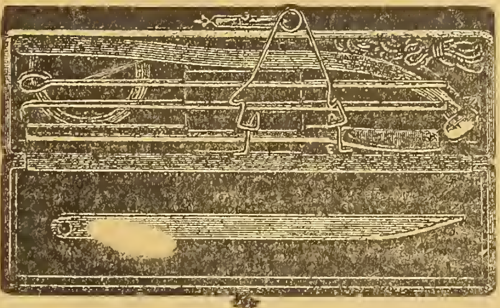
Buff Orpingtons and Barred Rocks **Pure Bred Stock**
Eggs $1.00 per 14. Incubator lots, $5.00 per 100
85 per cent fertility guaranteed.
Also, a limited number of Toulouse Goose Eggs at 15c each. Telephone 1767.
MRS. ALBERT MILLER,
1913 Ricardo St. Sta A, Los Angeles, Cal.



Two Eggs in place of ONE

AND right in the WINTER TIME too, when EGGS are 30c to 40c a dozen—
But more often it's THREE or FOUR Eggs in place of one, if you use
PURINA POULTRY FEEDS
Because they are prepared according to Nature's Laws, from the HEN'S STANDPOINT, and have been TESTED by feeding until perfect—until you can depend on them for RESULTS from EVERY HEN, EVERY TIME.
Feed of the same chemical analysis as Eggs won't make Eggs. Any more than Ground Leather will grow big crops, though chemically rich in Nitrogen.
No need to make expensive PERSONAL experiments any more—when every egg you should get and don't get is that much money right out of your pocket.
For Purina Feeds have been TESTED FOR YOU—prove our claims at OUR EXPENSE.
If the RESULTS don't come, just tie up the bag and write us, and we'll return every penny of your money, and tell you what to do with the unused feed. You are not out a cent in making the trial, for we will supply you through your dealer or direct FREIGHT PREPAID and the feed used will cost you nothing.
This is the Money Back Line—
Ask for particulars about our Free Test Plan. Write today.
ACME MILLS CO.
PACIFIC COAST MANUFACTURERS
PORTLAND, OREGON





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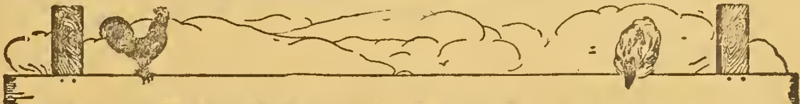
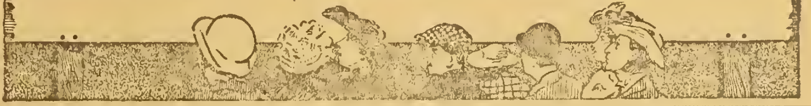
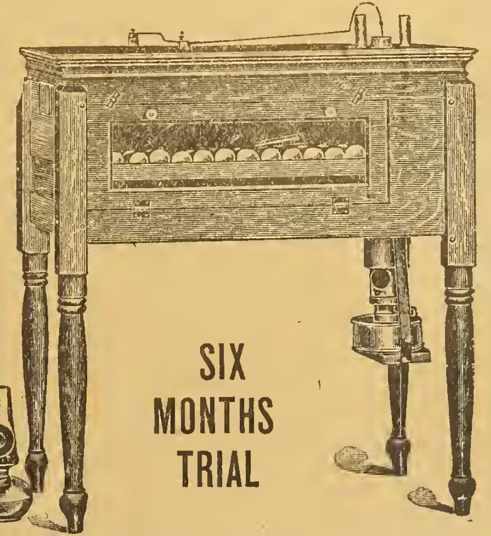
Double Your Profits by Caponizing.
Complete with Instructions, $2.50, Postpaid
STOCKMEN'S SUPPLY CO.
FRESNO, CALIFORNIA



POULTRYMEN! TAKE NOTICE!
The Jubilee Incubator Co. has just issued a magnificent catalogue—80 big pages—describing the Jubilee Incubators and Brooders—the business machines of the world. YOU NEED IT.
The Jubilee Line of Poultrymen's Goods sold direct to you at wholesale rates. The Jubilee Book tells all. Send for it. Mailed FREE.
JUBILEE INCUBATOR CO.
SUNNYVALE Santa Clara County CALIFORNIA





SIX MONTHS TRIAL

Poultry and Eggs Wanted
This sign you will see hanging outside of a merchant's store in nearly every town on the coast and it, in a measure, must convince you that there is money in the poultry business, and the
Chatham Incubators
will assist you in making money. Any responsible person can get a genuine **Chatham** and have SIX MONTHS TO PAY FOR IT—what is the use of you paying out money for an Incubator when you can make it pay over and over again for itself?
I can give you hundreds of testimonials from customers all over the Coast who purchased Chatham Incubators and Brooders last season on our **ON TIME PLAN**, and are thoroughly satisfied with them. The manufacturers fully guarantee every machine. Write me for our catalogue and some useful hints on poultry raising—it will be mailed to you free.
Geo. W. Foott, Box 2040, Portland, Ore.

Huskins' White Wyandottes

Prize winners for two years, 1905 and 1906, at L. A. Eggs for hatching from standard bred stock, $1.50 per dozen, or if you mention Cultivator, will send thirteen.

A. W. Huskins, 713 Waterloo St., **Los Angeles**

White Plymouth Rock Poultry Ranch

Eggs for hatching from First Class Stock $6.00 per 100, $1.50 per setting 15 eggs.

J. T. DAVIS, Prop. POMONA, CAL.

Blue Andalusian Eggs

$1.50 and $2.00 for 15, $7.00 per 100. Free range. I raised and sold cockerel winning first prize at late L. A. poultry show. Stock. ***Mrs. J. S. Duff, 3145 S. Hoover St., Los Angeles, Cal.***

Rhode Island Reds

Fine stock of cockerels and hens for sale. Eggs, $1.50 per setting.

C. E. DAVIS, REDLANDS, CAL.

S. C. White Leghorns Indian Runner Ducks

Eggs, $1 per setting, or $5 per 100. Leghorns of McFarlane strain Fertility high, 80% guaranteed. ***J. E. Beadle, 901 No. St. Louis St., Los Angeles.***

WILLARD POULTRY FARM, HYNES, CAL.

Mrs. F. T. Hungerford, Manager

INDIAN RUNNER DUCKS

At San Francisco show, 1905, I won 2nd and 3rd on young drake and 1st on young duck, with 3 entries. At the 1906 Los Angeles show, 1st on old drake, 1st and 2nd on young drake, 1st and 2nd on young and old duck and 1st on pen. Eggs—$1 for 13, $3 for 50, $5 for 100. Hens' eggs all ordered up to April 1st.

For Sale *My Entire Flock Buff Orpingtons*

This includes some male birds imported direct from Cook. Six breeding pens of nine females each, also hens and pullets suitable for market egg pens, and about 300 brooder chicks at all ages.

Will make price on entire flock or will sell in numbers to suit. Take Pasadena short line car to Lyndon street, walk east to end of street, first house south.

Ed. M. Burnell, Box 265, South Pasadena, Cal.

Sunset Phone, Pasadena Ex., 1219

FOR SIX YEARS

Albers' Black Minorcas

Have led in the shows every year, and they lead all breeds in egg production all the time. Eggs in large or small lots. Stock for sale. Circular free.

GEO. R. ALBERS

4849 MARMION WAY LOS ANGELES, CAL.

30 DAYS TRIAL

Buy From Our Factory—Save One-Third,

PRACTICAL INCUBATORS positively the best. Hatches more and stronger chicks. 10 YEARS' GUARANTEE

Cat. free. PRACTICAL INC. CO., 720 S. 11th St. San Jose, Cal.

Why do you pay $5.00 to $8.00 per hundred for eggs for hatching when you can get just as good eggs from just as good stock from us at one half that price? Our stock is large and healthy. The hens lay lots of large white eggs that run as high as 98% fertility. We sell eggs in incuator lots only at $2.50 per hundred.

Avenue Poultry Yards, Ventura, Cal.

Answer.—Water-glass, called silicate of soda, can be purchased at the Sun drug stores in Los Angeles for 85 cents a gallon, or by the five-gallons for 65 cents.

It can be bought at the Owl drug stores here and in San Francisco for $1 a gallon or for 80 cents per gallon in ten-gallon lots.

You put one gallon of the silicate of soda into ten gallons of water that has been boiled and cooled—or one pint into ten pints.

The temperature should not be above 65. A cellar is a good place.

The eggs must be kept two inches under the water by a board with a stone on it.

If you use a barrel have it quite clean, scalded out, or charred.

The eggs can be washed in pure water after they come out of the water-glass. They will keep good a year if they are quite fresh when put in. If you put in a few bad eggs they will spoil the whole lot.

Preserving eggs in water-glass is the best and cheapest way. One gallon will preserve fifty or sixty dozen.

* * *

Indian Runners. (N. E. M., Santa Ana.) I had an Indian Runner duck that got a hole in her crop, size of a half-dollar. It lived for a week in that condition. Do you know the cause and can you give a remedy for such ailments? Another duck in the flock has ruffled feathers and has not grown as large as others. They are all 11 months old, have all laid splendidly until the past month. They have been feed cracked corn, bran, meat scraps; have sand, oyster shells, charcoal and lime, and free alfalfa range. I cannot account for the unthrifty appearance of last duck referred to, although she is as brisk in her movements as any.

Answer.—I cannot account for the hole in your Indian Runner, if it came from without it may have been cut or broken glass, barbed wire or something sharp. If it came from within a bit of partially slaked lime would do it.

Ruffled feathers may come from a chill when young, or it may be a duck with "curly hair." Probably next moult will correct this.

HATS OFF TO LADY HEN.

In 1904 the state of Illinois raised over $20,000,000 worth of poultry and eggs, while a number of other Western and Southwestern states were not far behind these figures. In California the product of the hen aggregated $7,000,000, and the state imported $3,000,000 worth of eggs and poultry.

To many a rancher, chicken raising looks like a small business, yet when it is considered that the farmers' income can be greatly increased with but little additional expense, the wonder is that every farmer is not taking advantage of this profitable side issue.

Locally, merchants import eggs, and quite frequently mighty poor ones, to supply their trade; chickens are expressed here daily from the northern counties. Now eggs are often worth 40 cents a dozen, and will average 25 cents throughout the year. A chicken two-thirds grown brings 75 cents. What can the farmer grow that will bring him larger returns?—Exchange.

The poultry product of the country equals the annual wheat product. It amounted to $50,000,000 last year and without doubt directly benefited more people than any one product of the farm.

Standard Bred S. C. White Leghorns

EXTRA LARGE BIRDS AND HEAVY LAYERS. Eggs, $2 per 15; $8 per 100; $60 per 1000 from January until July only.

CAPTAIN MITCHELL SANTA BARBARA, CAL.

Author of "A Practical Poultry Plant for Southern California," $1.25 cloth binding, on sale by Calif. Cultivater

Dean's Pacific is an Incubator built on scientific plans and has all the latest improvements. Every machine guaranteed. "Facts From Experience" and Catalog for the asking. Address ***Dean's Place, 2509 Central Avenue, Los Angeles.***

SUCCESS

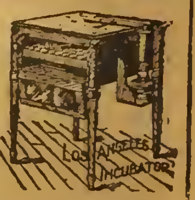
IS ATTAINED WITH

LOS ANGELES INCUBATORS

☞ SEND FOR CATALOGUE

LEE'S LICE KILLER EGG MAKER | LARGEST POULTRY SUPPLY HOUSE IN THE U. S.

HENRY ALBERS 315 S. MAIN ST. LOS AGNELES



West Coast Chick Feed

A perfectly balanced ration for the growing chicks. All pure food, no filler, no waste, hence cheapest. Keeps them growing and healthy. Made by

WEST COAST STOCK FOOD CO.

818 San Fernando St. (through to Alameda) Los Angeles, Cal.

SAM'L R. KELLAM, President of the L. A. Co. Poultry Association, says: "West Coast Chick Feed is the best feed for young chicks I have ever used."

MRS. A. BASLEY, the celebrated poultry authority says: "I want some more of your West Coast Chick Feed for it is excellent. I is purer, cleaner and appears better balanced than other feed I have been using, and to tell you the truth I have been experimenting feeeding both together and they always eat yours in preference."

S. M BUTLER, Lamanda Park, the well known poultry judge and successful breeder, says: "I want to say that too much praise can't be given West Coast Chick Feed for growing Chicks."

Copyright 1905 by Leo W. Marden

MARDEN EGG FARM

HYNES, CALIFORNIA

Breeders of S. C. White Leghorns Exclusively

Fine Feathers alone do not make the profitable hen. Our fowls have the reputation of being ***extra large, handsome*** and ***extra heavy layers.*** Last season, our eggs averaged over 95 per cent. fertile. ***Remember***—In getting eggs from us, you do not get them from the general runs. We have but one grade of eggs to sell for hatching and those are from our breeding pen composed of only the choicest fowls, selected from hundreds that are ***bred to lay.*** Hens that approach the ***200 egg record.***

Price of Eggs—$1.50 per 15, $5 per 100. ***Send for Illustrated Catalogue. Address,***

LEO. W. MARDEN, Manager

LAYING HENS

We have a few choice 1½-year-old Thoroughbred White Leghorn hens, which we are offering at a sacrifice. In order to make room for our young stock we are offering these fowls at $15.00 for 12 hens and 1 rooster or $100 per 100.

We also have a number of 5-months-old pullets, also of the same variety, on which we can name you the same price. If your stock needs renewing, send in your order at once, as they are going fast.

We have a Hatchery of 50,000 chicks per month capacity, from which we are making shipments daily to all parts of the Coast. If you need any just hatched chicks have your order booked at once, so as to get them on the date desired. Our price for just hatched chicks is $7.50 per hundred f. o. b. Petaluma.

We manufacture the famous MUST HATCH INCUBATORS AND BROODERS and a complete line of poultry supplies of every description. We cater to the best hatching egg trade on the Coast.

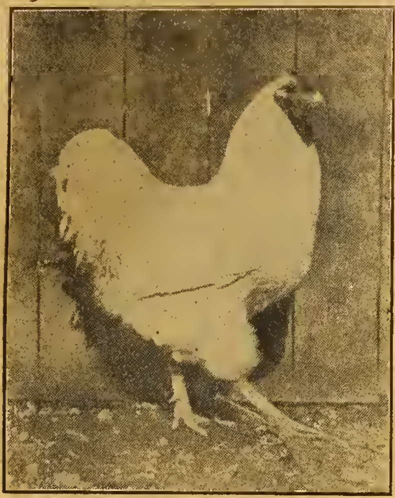
Before purchasing write for our new illustrated Catalogue B, which contains descriptions, prices, etc., of all our goods.

Must Hatch Incubator Co., Petaluma, Cal.

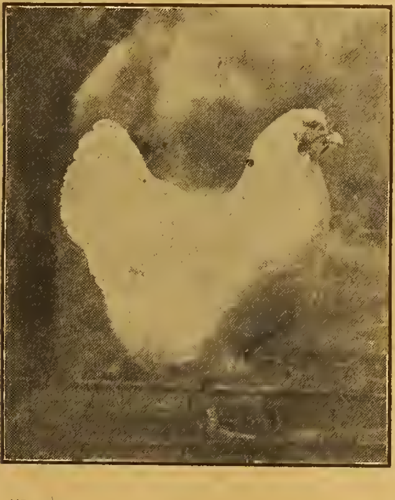
When writing to Advertisers Please mention Cultivator

WINNERS AT SAN FRANCISCO.

We give herewith a couple of engravings of beautiful Wyandottes, which were winners of firsts at the San Francisco Show, 1905. They are the property of A. L. R. Mantz, owner of the Capitol Avenue Poultry Farm, San Jose. That these birds are beauties may be imagined from the engravings.



"Snowball," whose picture appears above, is own brother to first and second prize pullets and of some other birds in the first prize pen at the same show. This cockerel is highly valued by its owner, who is grooming him for first prize at San Francisco next year, and if any fancier sees fit to lift that prize from Mr. Mantz's grasp they will have to put up some exceptionally fine stock.



"Madam White" was the first prize hen at the San Francisco 1905 show. She is the bird of whom Judge T. E. Orr, who was Superintendent of Poultry Association, remarked. "She is the whitest bird I have ever seen in my life." She is not only a beauty in form and feather, but comes, as do all of Mr. Mantz's birds, from a strong laying strain.

A Pittsburg man claims that he can make his hens lay by the use of electricity. Next!

When hens are closely confined they should have fresh grass every day.

"Did you tell your sister like I told you to that I am worth a million?"

"Sure."

"Good boy! Here's your dollar. What did she say?"

"She said you might have a million, but you wasn't worth a million by about $999,999.70."—Houston Post.

The dying man stirred restlessly. "Be sure and and send that order for more ice, Marie," he muttered.

The watchers looked at one another and nodded comprehensively. "He's almost there," they whispered.

White Wyandotte Eggs
For hatching. Pure Dustin & Hallack strain. From 1st Pen, $3.50 per setting, 2nd pen, $2.50.
Mrs. S. H. Church, 505 S. Main St., Los Angeles

White Plymouth Rocks
Standard Bred. Eggs for hatching, 10c each. Incubator lots, $7.00 per hundred.
O. M. Johnson, Gardena, Cal.
Yards at Strawberry Park, on electric lines.

For Sale—Eggs for Hatching
R. I. Reds and S. C. White Leghorns. Reds are imported stock. Leghorns are Howard strain. Pair of fine Orpingtons and cockerels for sale. ***M. J. R. Cutting, Monrovia, Cal.***

Single Comb Brown Leghorns
Exclusively
Stock for sale and eggs for hatching. Eggs from first pen $2.00 per 15 eggs, second pen $1.50 per 15. Incubator lots for $6.00 per 100 eggs. They have always won first prize whenever shown. Large birds and heavy layers.
W. E. Mercer - - Ventura, Cal.

A POULTRY COLONY
NEAR LOS ANGELES
Is at present being formed for the purpose of mutual benefit. Situation unexcelled; plenty of good water, splendid soil and close to town. For particulars apply to
Anna L. Pinkerton
Realty Trust Company, 129 So. Broadway, Los Angeles, Cal.

Fairview Poultry Yards
SILVER LACED WYANDOTTES
Two pens, both headed by prize-winning cockerels; 1st at Los Angeles and 1st at San Diego. Four prize-winning females in pens. Eggs, $1.50 per 15.
WHITE PLYMOUTH ROCKS
Special mating, pen headed by Fairview Prince, a son of the best layer in our yards. $1.50 per 15. Five pens large MATURE hens mated to vigorous Cockerels, $1 per 15 eggs; $5 per 100. Eggs from these pens specially recommended for incubator hatching.
A. E. NELSON, EL MONTE, CAL.

Golden Crest Poultry Yards
White Leghorns—Eggs, 50c per setting, from pens of Petaluma's best laying strain. $3.00 per 100.
Barred Rocks—75c per setting.
Prize winning **White Crested Black Polish** my specialty.
Geo. H. Randall
C St., Santa Ana

EGG FOOD A·C·W· IT FILLS THE BILL
We Have No Time
nor the desire to knock competitor's goods. We are too busy blowing our own horn and filling orders to try and break the drum in the other fellow's band. Our salesman only uses his hammer to nail up signs "Use A. C. W. Poultry Food." He takes orders, and lots of them; orders keep the factory running, that is what we are here for. We hope other manufacturers of Poultry Food are selling as much as we are. We are busy, and especially now, with our A. C. W. Chick Food. Little chicks seem to do better on A. C. W .mixture that is specially prepared for delicate digestions than on other foods; seems to be less sickness in the flock, that is what our customers say. They are the best Judges. We manufacture Bone Meal that is pure; come and see it ground, Blood and Meat Meal, too.
Then our goods are no higher than others. Ask your dealer or write to us direct.
Agricultural Chemical Works **901-907 Macy Street Los Angeles, Cal.**
Phones: Sunset, Boyle 3; Home, 6063
☞ "Hen Hints" free for the asking, valuable to all Poultry Raisers.

THE FEATHERLEY FARM ORPINGTONS
Over 30 prizes, specials and cups in **Buff, Black and White Orpingtons** on 27 entries this year at San Francisco, San Diego and Los Angeles. Bred for utility and egg purposes, as well as prize winning qualities. Eggs from $2 to $3 a setting. Write for free mating list, describing my ten prize yards. **P. L. Harley, Box C, Redlands, Cal.**

The Stockton Incubator
Is now manufactured under new management and is in every way put up as a first-class machine. Our 1906 model is a perfect working incubator, economical to run and gives a fine hatch.
Winner of silver medal at Pan-American, also medal at California State Fair. Write for circular and information.
Stockton Incubator Co.
Marshall & Barnes, Props. Stockton, Cal.

SAN FERNANDO MISSION
Mission View Poultry Ranch
Largest Breeder of WHITE WYANDOTTES on the Pacific Coast
¼ Wild Mammouth Bronze Turkeys.
1906 Winnings 32 Prizes Write for Circular Clear Eggs Replaced
MRS. C. D. HUBBARD,
Box 282 San Fernando, Cal.

Emery's Pure Meat Meal
Don't believe all we say, but just enough to buy our Poultry Foods
Ask your nearest dealer for them and take no imitations
Emery's "B. B. & B."
THE PACIFIC GUANO & FERTILIZER CO. Successors to N. Ohlandt & Co San Francisco, Cal.

"The Proof of the Egg and Chick Foods in the Results."
Give a trial order for
EXCELSIOR FOODS
And watch results. **Excelsior Chick Food** will raise 98% of your chicks. It is all right and gives a healthy lot of chicks. **Excelsior Egg Food** is another money maker. It is a complete food and keeps hens healthy and in good laying condition.
Besides, we put up Excelsior Fattening Food and Excelsior Moulting Food. Regarding these foods we issue a little leaflet in which we give description and illustration of fattening coop. If you will write us and mention "Cultivator" we will mail you one.
Del Monte Milling Co.
242 Central Avenue - - Los Angeles, Cal.

Chamberlain's Perfect Chick Feed
World's Chick Feed of To-Day. The only original **Dry Chick Feed.** All others are worthless imitations. **Chamberlain's Perfect Chick Feed** was used exclusively at the great St. Louis World's Fair during the 7 months. This the highest compliment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.
"Nothing Just as Good" "Nothing Just as Good"
CHAMBERLAIN'S PERFECT MASH EGG FEED, THE WORLD'S GREATEST EGG PRODUCER.
GERMAIN SEED CO.,
Pacific Coast Agents. LOS ANGELES, CALA,
SPECIAL PRICES ON TON LOTS.
Distributing Agents: FREDERICK BROWN, San Jose; CHAS. H. NEARPASS, San Diego; CHANNEL COMMERCIAL CO., Santa Barbara and Ventura.

THE GRANGE IN CALIFORNIA.

Editor Cultivator: The patrons throughout the State will be glad to hear that there is a marked increase in the interest taken in the grange work. Two new granges have been added to the list; three old ones have been revived; back dues are being paid and good work is being done all over the State.

In Southern California Farmers' Fire Insurance has made a special feature of the grange. This will be a great boon to the patrons of that vicinity if the insurance problem proves successful (there isn't a doubt as to its sucess with such capable men as Bro. John Tuohy at the head of it) as Farmers Mutual Fire Insurance is and has been in Sonoma county.

Resolutions favoring Parcels Post have been sent to the Congressman from their district and a committee of patrons from the various granges in the county met with the Board of Supervisors and urged it to provide some plan for the employment of convict labor on the public highways in said county.

The Worthy Master has sent a very encouraging letter to the Patrons and the Wo[illegible] Lecturer's letter contains much good advice, which, if heeded, will make the grange work more uniform.—Emily L. Burnham.

FOUNDATION FOR HOME.

In all probability, if we could ask every family what they most desired, the ansewer would be "Happy Homes." Now the question is, how are we trying to obtain happy homes?

It has been proven beyond all doubt that money, even great riches alone, cannot make a happy home. If we study the question closely, we find it is useless to strive after happiness. Timothy says, "Godliness, with contentment, is great gain." Here we have the whole thing in a nutshell, or at least the foundation of it. Serve God first. The whole family—and bring the children up to it; not by any iron-clad rules, but make it a business to live your religion before them every day. Attend church and Sunday school. Don't make it a duty, but a blessed privilege, and enjoy it. Don't make belive, but let it be the real thing. If you don't enjoy it, search your heart and find out what't wrong. If we have Godliness and contentment, we cannot very well help being happy. It will follow as naturally as water runs down hill. Do not think that if we could have our houses furnished a little better, or felt that we could afford to extend hospitality oftener, or a thousand and one things we could bring up before our mind's eye, we might be happier. It is all a delusion.

Let us impress this fact upon our minds. It is our attitude toward our environments that effects us, not the environments themselves. Let us be contented and thankful. If we are always looking into the future for happiness, we will never have it. Let us just live one day at a time and be thankful we cannot see even one day ahead. If the rain is ruining our crops, let us deliberately put our eyes and mind on something the rain can't ruin, and enjoy that. In other words, there's a bright side to everything if we but find it; and when it happens that we cannot find it, let us blame our own stupidity and stubbornness, not an "all wise Creator."—Mrs. M. Waters.

The California Promotion Committee has issued a handbook entitled "Intensive Farming in California." It is to be hoped the handbook is really practical and not theoretical, as so many of such publications are.

"EXCELSIOR."

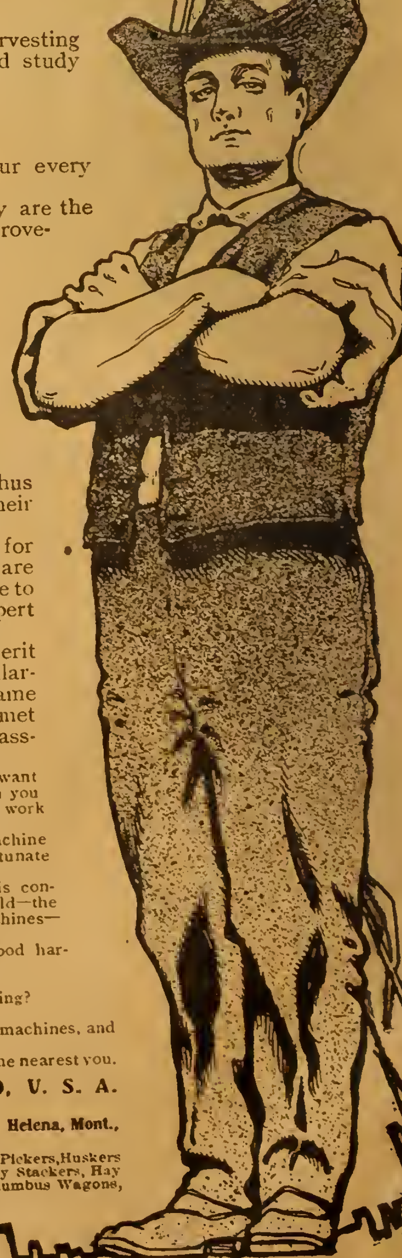
The Del Monte Milling Co. have nailed "Excelsior" to their mast and are putting out a line of "Excelsior Poultry Foods" which are claimed to be winners. Winners, because of the healthful, producing stock which is maintained when it is fed.

The company are putting out pure poultry foods. The Excelsior Chick Food is a scientifically compounded food for young chicks and sold at a most reasonable price. It is put up in packages, also in 100-lb. sacks. It is a complete food, so that only water and. possibly, green food need to be supplied.

Excelsior Egg Food, one feed a day, will shell out the eggs to the "queen's taste" and give a satisfied feeling to hen and to owner.

Besides these the company make fattening and moulting foods. Regarding them all they put out a little leaflet with illustrations of fattening coop and facts regarding poultry foods which will be of value.

James J. Hill, the great railroad man has offered prizes aggregating $7000 to promote scientific farming in Minnesota and the Dakotas.



NOW IS THE TIME!
GET A GOOD READY FOR HARVEST

You have heard of the cow that gives a big pail of milk and then at the last moment kicks over the bucket and spoils it all?

What about the man who grows a good crop of grain and then *half* harvests it?

You wouldn't *waste half* your crop.

Of course not.

But why waste *any of it?*

Why not get it *all?*

As the boys say, "Every little bit helps."

Every little bit *wasted, counts*—and counts *against* you and your profits.

As a sensible farmer, you can't afford to approach harvest time without making sure that you are ready for it the very minute that your grain is ready.

You cannot afford to depend upon a harvesting machine that wastes even a small part of your grain.

You cannot afford to spend your money for a "may-be-so" harvesting machine—one that may or may not do your work for you in a satisfactory manner

You cannot afford to start harvesting with a machine that may break down at your busiest moment.

You cannot afford to start harvesting with a machine that will half kill your horses before your grain is cut.

You cannot afford to start harvesting with a machine that is likely to cause delay in your work.

You cannot afford to take chances.

You want *to be sure*, and now is the time *to make sure.*

Go to the Nearest Dealer

Examine for yourself the line of standard harvesting and haying machines for 1906. Get a catalogue and study their construction. You will find in

Champion, Deering, McCormick,
Milwaukee, Osborne, Plano

lines harvesting and haying machines that meet your every expectation and fill your every requirement.

They are *right* in principle and design, for they are the product of a half century's inventive genius. Every improvement that the best mechanical experts of the world have been able to discover or devise in 50 years is embodied in their construction. That's why they are so convenient to handle—why they do their work so well. That explains too why they are so easy on man and horse—and why they waste so little grain

They are *right* in materials, for their manufacturers by co-operation are able to produce and select the best materials. By co-operation they are able to own, control aud operate their own lumber camps, their own iron mines, their own coal mines, their own coke furnaces, their own steel mills and other sources of raw materials, thus being sure at all times to have materials for making their machines of the highest quality.

They are *right* in workmanship, because the demand for these standard machines is so great that immense factories are necessary for their production, and their manufacturers are able to equip the factories with the best facilities and the most expert workmen?

They are *right* in reputation, for they have by their own merit survived years of strenuous competition. They gained their popularity solely on their merits. They retain their popularity in the same way. They are used all over the world solely because they have met the demands and filled the requirements of grain-growers and grass-growers.

Is not that just the machine you need for your harvest for 1906? You certainly want a machine with a reputation behind it—you cannot afford to run risks. Where can you find a machine of any kind that has a record of more years of successful, satisfactory work than you *know* these machines to have?

You want a harvesting or a haying machine made of the right materials. No machine can have *better* materials than have these machines—few manufacturers are fortunate enough to secure so good.

You want a machine that is built on the right plan—that "works right"—that is constructed on the right principle. The approval of the grain growers of the whole world—the successful standing of the test of years—the ever increasing popularity of these machines—these things tell the story of how they are built and how they work.

In reputation, in workmanship, in materials, in design—in all that goes to make good harvesting and haying machines they are *right*. They will meet your every requirement.

Can you afford then to go into the harvest with a machine that may fail you?

Can you afford to run the risk of a "break down" at a critical stage of your harvesting?

Can you afford to waste a part—even a small part—of your grain or grass?

Don't do it but go to the International dealer, secure a catalog, inspect these machines, and "get a good ready for harvest."

If you don't know an International dealer—write to us for the name and address of one nearest you.

INTERNATIONAL HARVESTER COMPANY OF AMERICA, CHICAGO, U. S. A.
(INCORPORATED)

WESTERN GENERAL AGENCIES: **Denver, Colo., Portland, Ore., Salt Lake City, Utah, Helena, Mont., Spokane, Wash., San Francisco, Cal.**

International Line—Binders, Reapers, Headers, Header-Binders, Corn Binders, Corn Shockers, Corn Pickers, Huskers and Shredders, Corn Shellers, Mowers, Hay Tedders, Hay Rakes, Hay Loaders, Sweep Rakes, Hay Stackers, Hay Balers, Knife Grinders, Gasoline Engines, Pumping Jacks, Manure Spreaders, Weber Wagons, Columbus Wagons, Bettendorf Wagons, Binder Twine.

Queries and Replies

CATALPA SPECIOSA.

Editor Cultivator: Please inform me how to plant Catapala seed.—R. I., Fullerton.

Catalpa seed is not hard to start. We have grown it in flats, sown in good garden loam with the addition of some leaf-mold and sand. On top put some leaf-mould or chopped florists' moss for the soil on top of seeds must never dry out; therefore watch them carefully, and while not allowing them to dry out, do not drown out.

THE MANNA PLANT.

Editor Cultivator: I send you today under separate cover a branch of the blossoms of a shrub that I wish you would name for me through the columns of the Cultivator. I think it is a very handsome plant when in bloom, and am very anxious to know what it is.—G. A. S., Porterville.

Your branch is from Tamarix Gallica, the Tamarisk, or Manna Plant, native to the Mediterranean region. In its native country (and elsewhere) an insect stings through the bark. and from this puncture exudes the gum which was the "manna" which the Israelites gathered in the desert for food. It is a fine shrub for arid sections, yet thrives on saline soils right down to the edge of the salt water.

A "ROYAL" IMPORTATION.

We saw in the Los Angeles customs house last week a pair of the finest Buff Orpingtons ever imported addressed to "W. A. Stewart, Royal Poultry Yards, 202 Ave. 63, Los Angeles. Cal., U. S. A."

We were told by a customs house official that this is only one of several importations made by Mr. Stewart.

CODLING MOTH SPRAYING

The First Spraying.—Use three lbs. of arsenate of lead to 50 gallons of water. Apply when the majority of the blossoms have shed their petals.

* * *

The Second Spraying—Use one and one-half lbs. of arsenate of lead to 50 gallons of water. Apply between the 1st and 15 th of May.

* * *

Subsequent Sprayings—Use one to one and one-half lbs. of arsenate of lead to 50 gallons of water. Apply 20 to 30 days after the second spraying, and follow at intervals of one month until the latter part of August.

* * *

The Final Spraying.—Use 2 lbs. of arsenate of lead to 50 gallons of water. Apply by the 15th September.

* * *

The Application of the Spray.—All the sprayings should be applied very thoroughly. Use a power outfit where possible, and maintain a pressure of 140 pounds or more. The extension rods should be as long as the men can successfully handle, also they should be provided with a battery of two or three nozzles. The distance between the nozzles is a matter of considerable importance: if too close together the cones of spray will interfere, but if they are widely separated on the T the inconvenience of handling is greatly increased. If the nozzles are set so as to point away from each other at a slight angle the cones of spray will not come together nearly so quickly as when they are set parallel. This result is also obtained by using a nozzle which throws a narrow cone of spray, such as the long-distance Bean. When a hand pump is used it is not practicable to run so many nozzles or maintain such high pressures, but good spraying may be done with such an outfit if sufficient time is taken to insure a thorough wetting of the tree.

* * *

Spraying a Tree.—Do the inside spraying first, and then, beginning at the top, apply the overshot or outside spray. Do not finish the sides and bottom until the top is thoroughly sprayed. The men should walk completely around the tree, and spray directly at it from all points. Do not try to spray around a corner. Before leaving any part of a tree the man should stand well back and spray the tips of the most extending branches.

The orchardist should insist on the tops of the trees being sprayed first and thoroughly. If this upper work is done well the lower branches will receive almost enough spray from the drip, and they can be then finished quickly. thus avoiding the greater drip loss which comes about through beginning at the bottom. Do not waste spray on the trunk and large limbs which are bare of foliage.

* * *

The Material to Use.—Arsenate of lead is the arsenical which has been found sufficiently safe to use in the Pajaro valley. There are a number of commercial brands of this compound and probably several are of the right quality for use here. but from our experiments we can only recommend Swift's Arsenate of Lead and Disparene.

* * *

Spraying for Caterpillars.—The tent caterpillar is easily controlled with arsenate of lead used at the rate of 1 to 1½ pounds to 50 gallons of water. Spray as soon as the insects appear. Both this insect and the canker worm will be well controlled if the first spraying for the codling is applied. The tussock moth, or horned caterpillar, is a much more difficult problem, after this insect is a few days old it is very resistant to arsenical sprays. The very young caterpillars can be poisoned, however, and some experiments are in progress to determine, if possible, the practicability of very early spraying as a control measure. The thorough (complete) removal of the egg masses during the winter is the only treatment which is known to be successful.

* * *

The Apple Scab.—For the apple scab use the Bordeaux mixture. Apply with the first spraying for the codling moth or before. Use the 5-5-50 formula (5 pounds of bluestone, 5 pounds of lime, and 50 gallons of water) for the first spraying. This is prepared by dissolving 5 pounds of bluestone and 5 pounds of lime in separate vessels of water. Strain the milk lime to remove lumps, and then pour the two solutions together, agitating thoroughly. The best Bordeaux is prepared by diluting the solution with 25 gallons of water, and pouring them together, a pail full of each at a time. The result will be 50 gallons of Bordeaux. Hydrated lime will be found very convenient and satisfactory in preparing the Bordeaux mixture as it does not require shaking.

It may also be advisable to use Bordeaux with the second spraying for the codling moth. At this time use the 4-4-50 formula, i. e., 4 pounds of lime and 4 pounds of bluestone to 50 gallons of water, prepared in the same manner as the 5-5-50 formula. When arsenate of lead is used with the Bordeaux mixture it should be added when the Bordeaux has been prepared, and at the same rate as if the tank contained water only.—W. H. VOLCK.

A supply of the desert guide posts for which an appropriation was made by the last legislature, the purchase and distribution of which were placed under the management of the State Department of Highways. is now ready for distribution to the counties that have asked for them.

"OLD TRUSTY," FREE INCUBATOR
CATALOGUE AND POULTRY BOOK
We want you to send and get our big free 124 page catalogue and poultry book contains 300 illustrations, and much valuable plain common sense, everyday chicken talk. It cost a lot to print this book, but we are glad to say that it's **Free to You** for the asking. 441 more "Old Trustys" arrive this week. Get one on free trial in your own home. Send today for free trial offer, and low prices.
We Pay the Freight
Free Trial In Your Own Home Write Today
300 Egg Size $25.00
120 Egg Size $13.00
McClanahan Co., Los Angeles

H. N. TILDEN & CO.
Wholesale dealers in
PRODUCE
Consignments of Butter, Cheese, Eggs, Poultry, Honey, Grain, Potatoes, Onions and Beans solicited.
209 Sacramento St. San Francisco, Cal.

BUFF LEGHORNS
Eggs for hatching from the famous J. W. Miller strain, Freeport. Ill. $1.25 per 15
CHAS. G. MILLER, 40 Elm St WATSONVILLE, CAL.

White Wyandottes and S. C. White Leghorns
Good layers. Trap nests used, Eggs: Wyandottes $1.50 to 2.50 per 15. Leghorns $1.50 per 15.
J. F. GOETTING, EL CASCO, CAL.

Buff and Black Orpingtons
Buff and Brown Leghorns
Indian Runner Ducks--Bronze Turkeys
Eggs and Young Stock in Season
W. W. Bliss - Duarte, Cal.

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Steel Construction, Strong, Durable, No Breakage, Sold on Easy Payments. Write us for Catalog and prices. Full line.
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ECLIPSE HAY PRESS CO., 620 W. 7th St., Kansas City, Mo.
Stocks Carried at Los Angeles and Sacramento.

Good Soil
LAND
Water Plenty
—IN—
KINGS RIVER DELTA
IS NOT AN EXPERIMENT.
Thousands of acres already sold—Thousands of acres more
TO SELL
On the Famous
Laguna-De-Tache-Grant
Where everything grows.
We are offering a new Subdivision at $40 per Acre
With Water from Kings River at 62½ cents per acre. Terms one-fourth cash, balance in eight yearly payments. We have made over 675 sales from this Grant so far and over 3,000 people are living on the land sold. That ought to be good evidence of the merits of the place. Don't you think it would be a good plan to look it up before buying elsewhere?
Low Price
Call or write for Descriptive Circular
NARES & SAUNDERS
135 So. Broadway, Los Angeles
Terms Easy

Household Department

WHAT HAVE WE DONE TODAY

We shall do so much in the year to come,
But what have we done today?
We shall give our gold in a princely sum,
But what did we give today?
We shall lift the heart and dry the tear,
We shall plant a hope in the place of fear,
We shall speak the words of love and cheer,
But what did we speak today?

We shall be so kind in the after-a-while,
But what have we been today?
We shall bring to each lonely life a smile,
But what have we brought today?
We shall give to truth a grander birth,
And to steadfast faith a deeper worth,
We shall feed the hungry souls of earth,
But whom have we fed today?

We shall reap such joys in the by and by,
But what have we sown today?
We shall build us mansions in the sky,
But what have we built today?
'Tis sweet in the idle dreams to bask,
But here and now do we do our task?
Yes, this is the thing our soul must ask,
"What have we done today?"
—Woman's Life.

THE HUMOROUS SIDE OF A DOCTOR'S LIFE.

"Oh, yes," said one of the members of the medical staff of a city hospital, "doctors do have a good many amusing experiences over which they laugh a good deal among themselves, but of course it would be unprofessional to tell them with the names of patients and all that. But I don't mind telling you of some of my own experiences and of the experiences of some of my medical brethern. I shall leave you in ignorance of the times and places of these occurrences, and you may concern yourself with the stories alone."

"I remember that a man once came to complaining that he was all 'run down' and wanted me to try and 'figger out' what was the matter with him. I asked a few questions and at his urgent request made a careful examination of him. Then I told him that I found him to be perfectly sound.

"'Lungs and heart all right?' he asked.

"'Perfectly normal,' I replied.

"'What about the gizzard?' he asked in perfect seriousness.

"Mind you I don't vouch for it, but they are telling of a man who was to have an operation for appendicitis and he surprised his physician by declaring that he would not undergo the operation until his pastor could be present.

"'Why do you want your minister present?' asked the physician.

"'Because,' he said, 'I wish to be opened with prayer.'

"A cousin of mine who is a doctor in a country village told me that he had among his pitients a kindly, simple-minded old lady who was always surprising him with her childlike verdancy. One day she met him on the street and said:

"'Doctor, is it true that they take people's stomachs out nowadays and clean 'em and fix 'em when they ain't all right?'

"My cousin told her that the stomachs ot people had been removed by skilled surgeons under certain conditions, and she said:

"'Well, doctor, some time when you are passin' my house I wish you would stop an' get mine an' give it a real good washin' an' cleanin' an' fetch it back. Mebbe it would take the soreness out of it, an' I reckon I could get along without it for a day or two if I didn't eat anything.'

"My cousin said that he told her that he was not far enough up in his profession to engage in that kind of laundry work, and she said placidly:

"'Then I recon I'll have to put up with it as it is, but if it could be repaired some I'd like it.'

"This same cousin told me that he once had a big German farmer come to him with tears in his eyes. saying that he was afraid his wife would 'go dead.' After asking a number of questions my cousin cheered the worried husband by telling him that his wife could not be very seriously ill.

"'I will ride out and see her this afternoon, and I have no doubts that she will soon be quite well again.

"'I hope it may be so,' said the relieved Teuton. 'I haf lost me alretty this fall mine cow, mine best horse, mine dog und six sheeps, und now if mine vife goes dead I vill not haf an animal left on mine blace.'

"You may have read the story of the country doctor who had a man ring his doorbell at one o'clock in the morning, and when the doctor thrust his head out of an upper window to ask what was wanted the man said that his wife was very ill and he wanted the doctor to come at once. Inquiry revealed the fact that the man lived five miles from town. The night was dark and stormy, the roads were at their worst, and the doctor was utterly worn out from overwork. A few questions revealed the fact that the woman was not in a dangerous condition and the doctor said:

"'I can't go away out to your place tonight. I am more than sick myself. I'll tell you what you do, you go and get Doctor Blank to go and see your wife.'

"The man agreed to this, and the doctor returned to his snug bed only to be routed out by the same man half an hour later.

"'See here, my friend, didn't I tell you to go and get Doctor Blank?' asked the doctor sharply.

"'I did go to Doctor Blank and he stuck his head out of the window and told me to go to the devil, so I came right back here to you.'

"A woman once came to me complaining that she had 'population' of the heart and that her eyesight was so bad she feared the 'opular' nerves were affected, and she capped the climax by asking me if I thought 'this here appendysechus disease was contagious.' I once had proof that some of the strange and utterly absurd methods of curing the sick that obtained in our country a century or more ago still obtain in some localities. In the first years of my practice I lived in a little country town, and a woman came to me to ask me to go to her home to see her little girl who was very ill with the whooping cough. I asked her if she had used any remedies, and she said:

"'Yes, I've doped her with three or four different things and I've had her shuk in a blanket, but it ain't helped her none.'

"I asked her hat she meant by having had the child 'shuk in a blanket,' and she said:

"'Why, some o' my neighbors say they have known lots o' children to be cured o' the whooping cough by just putting it in a blanket and then having four strong persons take the four corners o' the blanket an jounced the sick person up an' down in the blanket, but it just made my little girl cough worse."

"An Irishman once came to me complaining of constant 'n'ises' in his head, and he said: 'The n'ises are so bad Oi can hear them fifty feet away.' He also complained of being very deaf in his 'off ear.' He was very garrulous, and before he left he had almost committed me to the holding of an 'awtopsy' over his body in case he 'wint off sudden.' When I asked him what reason he had for wanting an autopsy, he said: 'Bedad an' Oi've always said thot whin Oi died Oi wanted to know phwat Oi died ov, an' so thot is phwy Oi want an awtopsy hild on me.'

"A physician once told me that he had a patient so hopelessly ill that he felt it to be his duty to tell him that he could not live longer than a few weeks. Some days later, when the man was almost gone, he called at the house and was surprised to find the man's wife coming out of his bedroom arrayed in very elaborate and really becoming mourning with a thick crepe veil dangling to her heels from her fetching widow"s bonnet. When she saw the doctor she said:

"'Oh, good morning, doctor. I've just been in showing poor Jim how I look in my mourning that I've had made so as to have it on hand when it's needed. I thought it might be some satisfaction to Jim to see how I look in it. He always liked to see his wife rigged up nice. I suppose it's been a kind of sad pleasure to him—poor dear!'

"Doctors sometimes have abundant proof of the fact that the swathing of a woman in dismal black with

The Green-Marshall Co.
Manufacturers
and Wholesale and Retail Dealers in
Paints, Oils, Varnishes and Painter's Supplies
So. Cali. Agents for Berry Bros. Varnishes
550 So. Broadway, Los Angeles 42-44 N Fair Oaks, Pasadena
Also Long Beach Factory 15th and Alameda Sts., Los Angeles

Bank by Mail

To accommodate the large number of people who keep money at home, or in a local bank where it is earning little or no interest, this bank receives deposits by mail on exactly the same terms as though made in person.

Four per cent baid on Term Deposits.

Write for booklet "A" on banking by mail—Tells how it's done.

Security Savings Bank
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Laid as Easily as a Carpet—

you or your farm-hand can do it perfectly. *No paper or tar about it.* It will resist fire—a guard against flying sparks. Tin will rust; shingles dry, warp, blow off. Rex Flintkote Roofing is proof against the elements in Winter or Summer and will be as perfectly water-proof after years of honest wear as the day it was laid.

For farm work there is no other roofing that can compare in any point of roof-excellence with Rex Flintkote Roofing.

Strong claims? They are being *proved* to-day in thousands of instances from Maine to Mexico where Rex Flintkote Roofing has been chosen for covering *all kinds* of buildings *in preference to all other* roofings. Make your own tests.

Let Us Send Samples Free

also our handsome booklet, which will tell you things about roofing that every farmer should know. "Look for the Boy" on the octagon trade-mark. ☞ Any good dealer has Rex Flintkote or can get it—the dealer who sells it is proud to sell it. He won't have to dodge you a year from now. Ask him why it costs *a little more* than the others—he knows.

J. A. & W. Bird & Co.
89 India St., Boston
Agents everywhere

yards of depressing crape around her is often the outward symbol of grief that does not exist in reality. I know of a doctor who had a woman patient who was suing her wretchedly depraved husband for a divorce, and in the midst of the divorce proceedings he fell dead. The doctor met the fortunate widow on the street some days later. She was clad in the very extreme of mourning, and when she met the doctor she extended a black-gloved hand and said: 'Don't say a word, doctor. I feel like a fool in this stuff, but I thought there'd be more talk if I didn't wear it than if I did. So here it is. I guess I'm not the only woman in widow's weeds who feels cheap when she meets the family doctor."

IN THE HOUSE AND OUT.

A traveling correspondent of the Cultivator sends the following article, in part, from the Farmer's wife, which he says so aptly represents conditions in the average California home today, he thinks it ought to be republished in the interest of the farmers' wife who does her work in the home under such trying conditions and with so little mechanical assistance: "To one who has visited many farm homes in different parts of California it seems strange and unexplainable that so many labor saving inventions in field machinery are provided and so few that are needed in the house. The price of one of the larger farm machines would nearly if not quite cover all the cost that the farmer should place in the house for the use of his wife.

"The farmer may say that he cannot afford to buy more than he does, and that in order to raise the crops necessary to provide for his family he must have the help of machinery. But is his work of providing materials any more necessary than that of his wife's in preparing them for use? The food must be prepared for the table and clothing made and kept clean and whole. Besides the work, which keeps the farmer's wife employed more hours each day than he, she has the additional burden and strain upon her vital forces of child-bearing and care.

"It is not entirely from selfish or thoughtlessness that a farmer whose barn and machine shed contain every mechanical invention he needs on the farm, sees his wife performing the greater portion of the work in the house after his grandmother's methods Were the farmer obliged to carry on his farm work one season as did his grandfather, by hand labor entirely, he might see the need of modernizing the work in the house as well as in the fields.

"It is the practical machinery provided for the farmer of the present day which has enabled him to reduce his daily labor to the minimum and by which he is enabled to accomplish so much in a given time."

But we are constrained to say in this connection it is largely the fault of many women themselves that they still labor so hard. I have heard several declare they "would rather have a washboard than all the washing machines they ever saw," and many women, having begun housekeeping on small means by "getting along without things," that were really needed in the house, have continued to do the same in the later years of prosperity without suggesting the need of the many modern inventions the progressive farmer's wife finds so necessary to comfortable living. A sewing machine and a clothes wringer are all the mechanical helps to be found in the average farmhouse, though there are many washing machines in use. The farmer's wife should have, besides these, a patent ironing board that can be set up anywhere and folded and put away when not in use, a gasoline or oil stove for summer cooking, a carpet sweeper and a self wringing mop bucket, a kitchen cabinet, where all cooking materials and utensils are ready at her hand, and save her innumerable trips daily to the pantry, and a clothes-reel or a wire pulley line, that she may stand in one place, dry-shod, when hanging out the washing, instead of walking the length of a long clothesline in wet grass.

The farmer has a wind-wheel, or a gasoline engine, and tank, for pumping water for his stock, but how about the water supply for his family? An elevated tank should be put up and the water conducted into the house, a wet sink and waste pipe provided, and a bathtub and toilet convenience as soon as possible. This would save much hard labor, for only those who have been obliged to pump water for all household purposes for years or for a lifetime can know what a strain this one task is upon the housewife.

All the helps to comfortable housekeeping cannot perhaps be provided at once, but may be planned for and purchased one at a time. The farmer's wife needs and should have every mechanical assistance possible in her work, as the farmer has in his.

RULES OF CLEANLINESS.

Without cleanliness and punctuality, good cooking is impossible.

Leave nothing dirty. Clean and clear as you go.

Haste, without hurry, saves worry, fuss and flurry.

Stew boiled is stew spoiled.

Strong fire for roasting, clear fire for boiling.

Wash vegetables in three waters.

Boil fish quickly; boil meat slowly.

A good cook wastes nothing.

Cookery Recipes

BAKED APPLE AND NUTS.

Remove cores and stuff the apples with chopped walnuts or pecans. Cover them with sugar, add a little water and bake in the usual way.

POTATO PUDDING.

Press mashed potatoes through a coarse sieve; to one quart of potatoes add one-half cupful of cream and the yoke of one egg beaten together, salt to taste and also a tablespoonful of chopped parsley; lastly fold in the stiffly beaten white of one egg and put the mixture in a pudding dish; drop small pieces of butter on the top and put in a quick oven over ten minutes to brown.

A RICE PUDDING.

Wash one-third cup of rice and put into a buttered pudding dish with four cups of milk, one-half teaspoonful of salt, one-third cup of sugar, and the grated rind of one lemon. Bake three hours in a very slow oven, stirring three times during the first hour of baking to prevent rice from settling. serve hot.

A MODERN FAMILY.

Grace is in her study,
  Modeling in clay,
  Maude is getting ready
  For the matinee.
Jane is writing verses,
  In the lower hall,
Where Genevieve rehearses,
  Plays at basket ball.
O'er a love tale sighing,
  Edith hides her face,
While Antoinette is trying,
  To decorate a vase.
Brother's at the casement,
  Bawling for his lunch,
And ma is in the basement
  Cooking for the bunch.

—Gowrie News.

FEMININE ECONOMY.

The following letter was received from his sister by a New Yorker who was away from home on a visit:

"I am sending by mail a parcel containing the golf-coat you wanted. As the brass buttons are heavy, I have cut them off to save postage. Your loving sister, J———.

"P. S.—You will find the buttons in the right-hand pocket of the coat."Harper's Weekly.

Monterey county has some of the finest Berkshire hogs to be found in the State.

BURN AIR AND SAVE FUEL

You can do it with the

HAGUE IMPROVED DOMESTIC OIL BURNER

It burns more air than any other burner on the market. Can be fitted to stoves, ranges, furnaces, and all kinds of heating systems. Simplest and most economical burner on the market. If you want the most heat for th least money, write for information to

Hague Domestic Oil Burner Co, 810 So Spring St., Los Angeles, Cal.

Seek Safety First

There is but one absolutely safe and certain way to accumulate money—that is to save it and deposit it in the bank, where it is free from the ups and downs of speculation.

The Board of Directors and Officers of this Bank are men of sound business judgment and integrity—men who have been identified with the marvelous development of Los Angeles and the Great Southwest.

4% Interest Paid on Term Deposits.

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Interest Compounded Semi-annually

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GERMAN AMERICAN SAVINGS BANK

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Choice of

MANY ROUTES

East and West

SOUTHERN PACIFIC

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Pullman Vestibuled Trains Daily. Personally Conducted Tourist Excursions via all routes every day in the week at Reduced Rates. The SOUTHERN PACIFIC gives you choice of many routes from the northern boundary of the United States to the Atlantic Coast, so that you may go one way and return another, with varied scenery and climatic conditions.

Full information at 261 S. Spring St., Los Angeles, or from any agent

SOUTHERN PACIFIC

COLONIST RATES TO CALIFORNIA

Santa Fe

Will be in effect every day, Feb. 15 to April 7, and Sept. 15 to Oct. 31, 1906, from all points in the east and south.

Following are a few:

Chicago	$33.00	Kansas City & Leavenworth	$25.00
St. Louis	30.00	St. Joseph & Atchison	25.00
Galveston	26.45	Council Bluffs & Omaha	25.00
Dallas, Houston and Fort Worth			25.00
Nearly all points in Kansas, Oklahoma and Indian Territory			25.00

Colonist rates are also in effect from all points east of Chicago and south of the Ohio river.

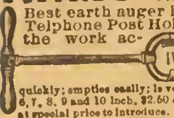
Santa Fe Agents in California will take deposits of money to cover price of tickets, which will be promptly furnished to passengers at any point from which these rates are in effect.

California illustrated literature mailed free to any address or may be had from Santa Fe representatives.

Tourist Sleeping Car Lines

Colonist tickets are honored in tourist sleeping cars which run via the Santa Fe to Los Angeles and San Francisco.

IWANS' POST HOLE AND WELL AUGER



Best earth auger in the world. For Fence and Telphone Post Holes, Wells, etc. Three times the work accomplished with an Iwan Auger than with any other. Makes hole smoothly and quickly; empties easily; is very durable. Used by U. S. Gov't. 3, 4, 5, 6, 7, 8, 9 and 10 inch, $2.50 each; 12 inch, $6.00; 14 inch, $7.50. Sample at special price to introduce. Agents Wanted. Inquire of dealers or write direct for particulars. IWAN BROS., Box A Streator, ILL.

OPIUM and Whiskey Habits cured at home without pain. Book of particulars sent FREE. B. M. Woolley, M. D., Atlanta, Ga., 103 N. Pryor St.

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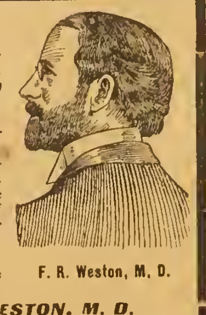
without Pain or the Knife



F. R. Weston, M. D.

Over 20 years experience. Office hours from 10 a.m. to 4 p.m. Sundays by appointment. If possible, call on me for consultation. If not, write today for my FREE BOOK—"Rectal and Intestinal Diseases: Their Cause and Cure."

FRANK R. WESTON, M. D.

Suite 501-502 Donohoe Building
6 Taylor St., Cor. Market, San Francisco.

When writing advertisers mention Cultivator

VULCANITE

ROOFING

JUST THE THING ALL THE YEAR ROUND

Non-conductive of heat and cold. Does not buckle—lays perfectly smooth. A material which is at once light, strong, durable and cheap, and at the same time water-proof, wind-proof, acid and fume-proof. Also used for covering outside of buildings, floors of warehouses, offices, etc. Requires no paint; is permanent and inexpensive. Comes in various weights.

Samples and price list upon application.

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255 S. LOS ANGELES ST.
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Climate and Crops

General Summary.—The week was unusually stormy throughout California. The rainfall was phenomenally heavy in most places, and comparatively high temperatures in the afternoons caused a rapid melting of the snow in places. Fortunately the week closed with clearing cold weather. For the reason mentioned above nearly all of the rivers rose rapidiy, and in many places reached stages above the danger line.

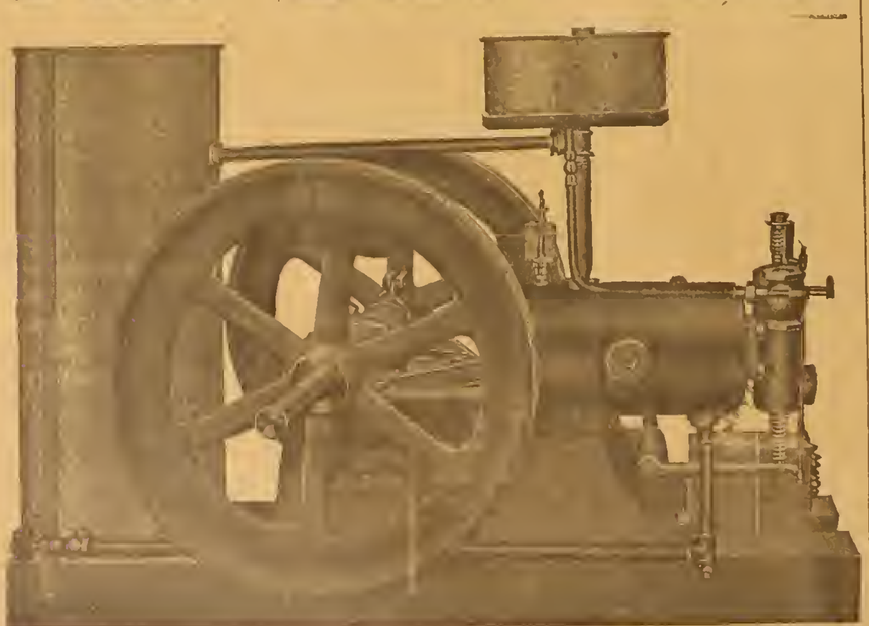
Coast and Bay Sections.—Numerous rain squalls occurred during the week, with very heavy rains at the beginning of the week and also on Friday and Saturday. Amounts ranging from one inch to nearly two inches were recorded in 24 hours, ending Saturday morning. The wind attained velocities ranging from 36 to 72 miles per hour from the north west along the coast north of San Francisco. A small amount of snow fell on Mt. Tamalpais at the close of the week. On Thursday afternoon temperatures reached 74 degrees. Notwithstanding the high wind light frost occurred Monday morning.

San Joaquin Valley.—Cloudy, stormy weather prevailed throughout the week, with rain on four days. The rain was not as heavy in this section as elsewhere in the State, and fair weather on Tuesday and Wednesday allowed the high waters in the rivers to gradually lower. Afternoon temperatures reached as high as 74 degrees. Heavy frost occurred on Monday morning. Much snow is reported in the mountains. Thunderstorms were reported in the vicinity of Lodi.

Southern California.—The week began with heavy rain and brisk southwest wind throughout the entire country south of the Tehachapi. In the 48 hours ending Tuesday morning the rainfall in the vicinity of Point Conception amounted to nearly two inches. At Los Angeles more than an inch and a half fell. All of the reservoirs are filled and there is every prospect of an abundant supply of water for the coming season.

During the month of March more than seven inches of rain fell at Los Angeles and nearly five inches at San Diego.

The Sure-Go



For all the purposes and uses to which Gasoline Engines may be applied our Sure Go Special will be found better than the rest.

It is built on true scientific principles and is acme of mechanical simplicity.

It has no intricate parts, is compactly built, with proper adjustments to take up, wear and maintain perfect alignments.

A glance at the illustration will prove the correctness of the design for strength and even balance.

Our price is the lowest and our engine is the very best.

For full information, address,

Aldritt & Weaver,
115 North Broadway, - Los Angeles, Cal.

The Produce Markets

Los Angeles Markets.

Los Angeles, April 5, 1096.

Butter remains unchanged, but a slump may be expected at any time.

Eggs have again advanced.

Vegetables are rather more plentiful, but are quickly taken by consumers.

Butter.

B. of T. Creamery, per roll	.50
Valley Creamery, fancy	.48
Valley Storage	.46@47

Cheese.

Cal. 3-lb. hand	17½
Cal. Young America	16½
California Anchor	15½
Northern	16@17
Domestic Swiss	19@20
Imported do	26½@27

Eggs.

Eggs, Fresh Ranch	.20

Poultry.

Fryers, 2 1-2 lbs	18@19
Broilers, under 2 lbs., per lb.	19@21
Young Roosters. per lb.	16@17
Hens. per lb.	14
Ducks, per lb.	14@15
Geese	14@15
Turkeys	19

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock:

Hogs, 200 lbs.	6
Prime Steers	4½
Cows	3¼
Calves, per lb	5
Sheep, ewes, per head	4.50
Wethers	5.00

Potatoes.

Northern. per sack	1.60@1.70
Locals, per cwt	1.10@1.25
Locals, new, per box	2.25
Sweets, white, per cwt.	2.40@2.50
Sweets, yellow, cwt.	2.00

Vegetables.

Onions, Aust. Brown, cwt.	1.50
Onions, yellow, cwt.	1.75
Garlic	7@10
Cabbage, per sack	1.00@1.35
Cauliflower, per doz	.60
Asparagus	8@9
Lettuce, per dozen	20@30
Bell Peppers	18@20
Chili, Green	20@25
Cucumbers. per doz	60@1.23
Radishes, per doz	.15
Lima Beans	10@15
String Beans	8@10
Beets	.40
Green Onions, doz. bunches	20@25
Carrots, doz. bunches	25@35
Turnips, doz. bunches	.25
Celery, per doz	45@50
Peas, per lb	5@6
Oyster Plant	.40
Tomatoes, local	1.50@1.73
Parsley, per doz. bunches	.75
Pie Pumpkin, per lb.	.01

Citrus Fruits.

Lemons, standard	1.25@1.35
Lemons, choice	1.25@1.50
Navels, extra fancy	2.25@2.50
Grapefruit	1.75@3.0
Navels, choice	1.85@2.0
Strawberries, per box	10@1

Fresh Fruits

Pear, Winter Neils, per box	4@
Guavas, per box	3½@
Barley, No. 1	14.00@16.0

Dried Fruit.

Apples, evaporated, ex ch. 9. ch

Apricots, ex ch 11: fy. 8½: ch. 7

Peaches, fy. 10½: ch. 9.

Santa Clara Prunes, 30-40. 8½, 40 [illegible] 7½. 50-60. 7; 60-70. 6½.

Loose Muscatel Raisins, 2-crow [illegible] 3-crown 5 4-crown, 6

Beans, Dried.

Limas	5.00@5.50
Pinks, fancy	2.50@2.65
Lady Washington	3.00@3.10
Small White	3.50@3.75
Black Eyes	5.50@6.00

Honey.

Honey, comb frames	14½@15
White, strained, per lb	6½@7
Light Amber	6
Amber	5
Beeswax	27

Hay.

Barley, No. 1	14.00@15.00
Alfalfa, local	13@13.50
Alfalfa, Northern	11@12.50
Wheat. No. 1	16.00
Tame Oat	11@18.50

Grain.

Selling prices of mill stuffs f. o. b. cars L. A., in quantity, are:

Rolled Barley	1.40
Bran	1.25
Feed Corn Meal	1.45
Shorts	1.45
Wheat, per cwt	1.60
Cracked Corn	1.40
Oil Cake Meal	2.25
Cocoanut Meal	1.55

San Francisco Markets.

San Francisco, April 4, 1906.

Butter.

Butter receipts have been liberal and prices have dropped from two to three cents over last quotations.

Fresh California extras	.20
Fresh California, firsts	.19
Fresh California, seconds	.18

Cheese.

Cheese has also taken a slump and is down from one to two cents.

California, new	11½
California, firsts	10½
California seconds	11
Eastern Cheddars	16
Storage, California	14
Storage, eastern	16

Eggs.

Eggs are also lower, but the demand is good.

Eggs, fresh (ranch)	18½
Firsts	16½
Storage, Eastern	14

Poultry.

Old Roosters, per doz.	4.50@5.50
Young Roosters, per doz.	6.00@7.50
Hens, per doz.	5.00@7.50
Ducks, per doz.	5.00@7.00
Turkeys, per lb.	15@17
Geese, per pair,	2.00@2.50

Live Stock.

Hogs, per lb., 80 to 130 lbs.	7
Hogs, per lb., to 250 lbs.	7¼
Hogs. pr lb., 250 to 350 lbs.	6¾
Hogs, per lb., rough heavy	5
Prime Steers, lb	8½
Cows, per lb.	6½
Calves, lb.	5@5½
Sheep, ewes, per lb.	4½@5
Lambs, per lb	5@7
Wethers, per lb.	5@5½

Potatoes.

River Burbanks	.65@85
Oregon Burbanks	.75@1.05
Salinas Burbanks	1.00@1.50
Sweets, Merced	.75@1.25

Vegetables.

Asparagus	6
Rhubarb, per box	.65@85
Onions, Oregon, per sack	85@1.15
Onions, Australian	3.50
Bell Peppers, green	.25
Cucumbers, per doz.	.75@1.00
Tomatoes, per box	.90@1.25
String Beans	.15
Wax Beans	.12

Summer Squash, per box	1.25
Green Peas, per lb	3½@5

Citrus Fruits.

Navels, fancy	2.50@3.50
Seedlings	1.25@1.50
Lemons, standard	1.00@3.00
Grapefruit	1.50@3.00
Tangerines	1.50@2.00

Fresh Fruits.

Apples are in good demand with prices a trifle higher.

Apples, per box, extra	1.75@2.25
Apples, fancy	1.25@1.65

Beans, Dried.

Beans have also taken a slightly higher price.

Limas	4.60
Pinks	1.90@2.90
Small Whites	3.15@3.25
Black Eyes	4.40@4.50
Bayos	3.40@3.50
Red Kidney	3.50@3.75
Horse eBans	1.50@1.75

Hay.

Barley, new	$8.00@11.00
Alfalfa	10.50@11.50
Wheat	11.00@16.00
Oats	9.00@13.00

Grain.

Wheat	1.27@1.30
Barley	1.20
Corn, California, New Large	1.35
Oats	1.50@1.70
Rye	1.45@1.52
Rolled Barley, per ton	25.00@26.00
Bran. per ton,	19.50@20.50
Feed Corn Meal, per ton	28.00@30.50
Middlings ½	26@30
Cracked Corn, per ton	28.50
Oil Cake Meal, per ton	37.00
Cocoanut Cake, per ton	23.00

CITRUS MARKETS

During the past week the eastern orange market has undergone most unusual fluctuations, the range in price, in some instances, being fifty cents per box. This uneasy condition was caused by cold snaps, but at present the prices are steady at the same satisfactory scale as for some time past. All interested are agreed that the entire season is one that will prove highly satisfactory to the California grower.

NEW YORK, April 3.—Twenty-nine cars were sold at auction today. The weather is favorable.

NAVELS (ventilated.)

	Averages.
Quail xc O-C Ex	$3.15
Winner fy S. B. Co. Fr Ex	3.25
Blue Mountain xf Riverside Ex	3.25
Diamond xc San Antonio Ex	3.30
Bear xf O-C Ex	3.55
Gold Buckle xf R-H Ex	3.50
Cactus xc CCU Highland	3.00
Santa Fe Moffatt Ft. Co	2.75
Santa Fe st Moffatt Ft. Co	2.75
Santa Fe st Moffatt Ft. Co	2.80
Fountain ch Moffatt Ft. Co	3.05
Fountain ch Moffatt Ft. Co	3.25
Fountain ch Moffatt Ft. Co	3.25
Ocean fy Moffatt Ft. Co	3.45
Coyote ch O-C Ex	3.00
Green Mountain	3.00
Orchard Queen ch Collins F. Co.	3.15
Orang Prince fy Collins F. Co.	3.35
Laurel xf Cal Ft. Co	3.25
Tiger Head xc I. L. Lyon & Son.	3.20
Lion Head xf I. L. Lyon & Son.	3.55

NAVELS (Iced.)

Teal or Covina Ft Ex	2.80
Yankee Doodle st Riverside Ex.	2.80
Holly st Covina Ft Co	2.90
Butterfly ch Covina Ft Co	2.95
Navajo st Riverside Ex	3.00
Riverside st Riverside Ex	3.00
Spanish Girl A. H. Fruit Co	3.00
Red Globe xc Riverside Ex	3.15
Butterfly ch Covina Ft Ex	3.25
Eagle xc Riverside Ex	3.25
Square or Riverside Ex	3.40
Our Pride xf Riverside Ex	3.50
Sweetheart fy Riverside Ex	3.50
Square or Riverside Ex	3.50
W Highland fy Cleghorn & Co	3.15
W Highland fy Cleghorn & Co	3.30
Sky High xc CCU Arlington	2.90
Dos Palmos xc San Marino G P A	3.15
Corona Lily	3.15
Pyramid xc G R Hand & Co	3.25
Laurel xf Call Ft. Co	3.25
Setter	3.25
Salter	3.30
Flower xc Upland Dist	3.30
Gavilan fy San Jacinto L. Co	3.40
Flower fy Upland Dist	3.55

BLOODS (whole boxes, vent.)

Princess fy Call Ft. Co	2.60

Molasses now at $1.00 a barrel, for hogs. cows and horses. The Alamitos Sugar Company.

BLOODS (half boxes, vent.)

Blue Mountain xf Riverside Ex	$1.40
Laurel xf Call Ft. Co	1.40

BLOODS (whole boxes, iced.)

Palm Tree ch A. H. Fruit Co	2.55
Palm Tree ch A. H. Fruit Co	2.60
Red Globe xc Riverside Ex	2.85
Squirrel fy A. H. Fruit Co	2.85
Squirrel fy A. H. Fruit Ct	3.20

BLOODS (half baxes, iced.)

La Mesa xf Riverside Ex	1.35
La Mesa xf Riverside Ex	1.45

SEEDLINGS (vent.)

Independent fy Highland	2.95

SEEDLINGS (iced.)

Dos Palmos xc San M. GPA	2.60

LEMONS (vent.)

Flower ch Upland Dist	2.35
Flower fy Upland Dist	2.70
Peerless xc CCU Nt. City	1.95
Cactus xc CCU Highland	2.10

LEMONS (iced.)

Golden Rule xc Riverside Ex	2.50

GRAPEFRUIT (vent.)

Independent fy Highland	4.40

GRAPEFRUIT (iced.)

Teal of Covina Ft Ex	3.55

TANGERINES (vent.)

Loin Head xf I. L. Lyon & Son.	3.15

TANGERINES (iced.)

Squirrel fy A H Ft Ex	1.70
Blue Globe xf Riverside Ex	1.70
Flower fy Upland Dist	1.20
Flower fy Upland Dist	1.80
La Mesa xf Riverside Ex	2.30

Foreign Lemon Sale.

NEW YORK, April 3.—Twelve thousand boxes of Sicily lemons were sold at auction today. The condition of the stock offered was only fair. The market is slightly lower. Twenty-five thousand boxes will be sold next Thursday.

Fancy 30s brought	$2.20@2.55
Choice 300s brought	1.65@2.25
Fancy 360s brought	2.40@2.75
Choice 360s brought	1.95@2.45

CATCHING PICKPOCKETS.

The Sharples Separator Co., of West Chester, Pa., have a man in almost every town who makes it his business to catch pickpockets. Strangely enough, these pickpockets are always caught robbing themselves—and are always farmers or dairymen. The Sharples Separator Company's men do not send these convicted self pickpockets to jail, but show them how to make **more** money. They prove to them that, if they have not a famous Sharples Tubular Cream Separator, they are picking out of their own pocket one-third to one-half the profits they should make from their milk—that they are, in fact, losing one-third to one-half of their cream. These men can convict **you** of robbing **yourself.** They will do it, either by lending you a Tubular for a free trial, or by skimming for you, free, a batch of milk you have already skimmed with pans or cans, and taking out of that milk, which you think is skimmed clean, the cream you have left in it. This proof won't cost you one cent, but will help you increase your butter money from one and one-third to double what you now make. All you need to do, to find out how much cream your pans or cans lose, is to borrow a Tubular from the agent for a free trial, or take a batch of skimmed milk to the nearest Tubular agent. The result will surprise you, cost you nothing, and put money in your pocket. We suggest that you write The Sharples Separator Co., of West Chester, Pa., about this, at the same time asking them for catalog No. N260.

AN ARTISTIC CATALOGUE.

Howard & Smith, of Los Angeles, are sending out the most ornate, original and altogether the finest catalogue of ornamentals ever issued by a nursery firm on the Pacific Coast. It is, in every sense, a work of art.

I WILL GIVE $1000

IF I FAIL TO CURE ANY CANCER OR TUMOR

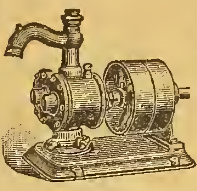
I Treat Before it poisons deep glands. **NO KNIFE OR PAIN. No Pay Until Cured.** No X Ray or other Swindle. A Pacific Island plant makes the cures. **Absolute Guarantee.** Any tumor, lump or sore on the lip, face or anywhere six months is cancer. **130-Page Book** sent free with testimonials of thousands cured. Write to them.

ANY LUMP IN WOMAN'S BREAST

Is CANCER and if neglected it will always poison deep glands in the armpit and kill quickly.

Address DR. & MRS. DR. CHAMLEY & CO.
Most Successful Cancer Specialists Living.
25 Third St., San Francisco, Cal.

KINDLY SEND TO SOME ONE WITH CANCER



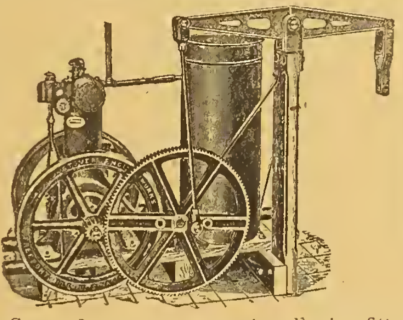
Gould's Rotary Pumps

Red Cross Wind Mills

Woodin & Little

Pumps for all purposes. Pipe Fittings. Brass Goods, Wind Mills. Gasoline Engines. Tanks, Garden Tools. Send for Catalogue.

209-211 Market St. **Department A**
San Francisco, Cal.



Stover 2 horse power Gasoline Engine, fitted with electric sparks, high grade. easy to start; oh, how simple.

A Better Way
To Go East

Than is offered by the Salt Lake Route may be available some day but not at present. Let us suggest some reasons why you should go that way on your next trip.

Because, if you came west via the Salt Lake Route you must have been so well satisfied with the service and comfort enjoyed that you want to return the same way.

Because, if you came west some other way you surely should return via the Salt Lake Route to see a different part of the country.

Because, it traverses a country full of interest, pictiresque and unique in many ways.

Because, it is the short line via Salt Lake City, where you may stop and see the sights of that Mormon city without extra expense.

Because, it runs the famous "Los Angeles Limited," one of the finest and fastest trains in the west, carrying both standard and tourist sleepers through from Los Angeles to Chicago via Salt Lake City, Ogden and Omaha. Therefore, if you prefer to travel in a tourist sleeper you may go just as fast as the passengers in the standard cars, and considerably cheaper.

Because, on the "Overland" are standard sleepers through from Los Angeles to Ogden and Denver and tourist sleepers through to Denver, Omaha, Kansas City, St. Louis and Chicago, over the various lines east of Salt Lake City, enabling you without change of cars to see Rocky Mountain scenery to your heart's content.

Because in both trains are run Dining cars in which are served excellent a la carte meals, whitch may be enjoyed at your leisure; no short stops at stations for quick lunch.

Because, well there are other reasons which any Salt Lake Route Agent will be glad to explain to you. Just call on the nearest one for more particulars, literature, etc., or write

T. C. Peck, A. G. P. A.
SALT LAKE ROUTE
Los Angeles, Cal.

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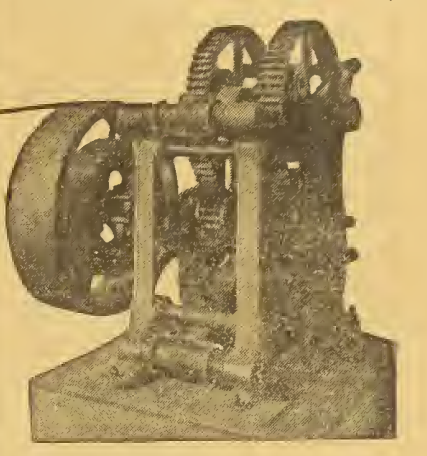
The Pomona Pump



The New Pomona Pump is now being manufactured with machine cut gears and machine cut steel or bronze pinions. The pump fitted with this kind of gearing runs as smooth as a clock and there is absolutely no noise or vibration. The company have recently taken contracts for installing their largest sized pump with this class of gearing for the Artesian Belt Water Company of San Dimas, Western Water & Power Company of Glendora and other large irrigation companies. They are required to furnish these pumps with cylinders up to 12 inches in diameter and 72 stroke which has capacity of over 60 Miner's inches of water. The valves are made entirely of phosphor bronze with ground metal taper seats so there is very little obstructiin to the water in passing through them and it is impossible to clog them with sand. These, in connection with machine cut gears, in the pump head, make a strictly high grade pumping outfit and the best by along ways of anything on the market today

This head and valves are both protected by United States patent. Beware of infringing as both manfacturer and user are liable

The company has recently installed one of their latest Improved heads for the Santa Anita Land Company, a subdivision of the Baldwin Ranch Below is what the owners have to say about it:

"The new 38 pump you installed for us on our tract on the E. J. (Lucky) Baldwin Ranch is giving us satisfaction in every way. We think we have the very best that money will buy. Both as regards to pump, material used and installation. We made an excellent change when we removed the pump we had been using and installed your make."

We have pleased these people and there is no reason why we cannot please you.

Send for catalog to

The Pomona Manufacturing Co.
Pomona, California

RUBEROID ROOFING

The peer of all with 14 years' record for durability and efficiency.
Cheapest because best.

BLAKE, MOFFITT & TOWNE

Both Phones 679 **242 to 248 So. Los Angeles St., Los Angeles, Cal.**

NATIONAL WOOD PIPE CO.

MADE FROM CALIFORNIA REDWOOD OR SELECTED PUGET SOUND YELLOW FIR

WOOD PIPE

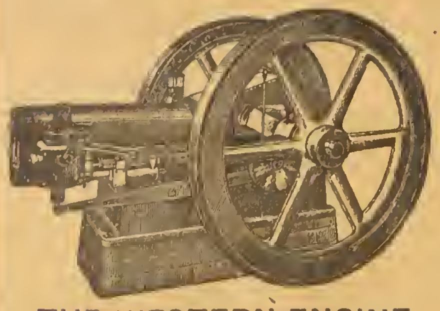
WOODWARD PATENT MACHINE BANDED PIPE
WHEELER PATENT CONTINUOUS STAVE PIPE
BORED WOOD WATER PIPE

Puget Sound Office, Olympia, Washington
Los Angeles Office, cor. Sixth and Mateo Sts. **San Francisco Office. 301 Market St.**

A booklet, "The Whole Story About Wood Pipe," mailed free upon request

THE WESTERN GAS ENGINE

"From Factory Direct to User"



THE WESTERN ENGINE
Maximum Power at Minimum Cost

Designed and built by Western experts for Western use with Western fuel. In construction the Western embodies many original, yet practical ideas, which place it in advance of any other make on the market today. The simplest, strongest and best engine for

Irrigation, Power and Electric Plants.
Any Size from 5 to 500 H. P.

Burns cheapest fuel—gasoline, distillate or crude oil—with a saving of 20 to 40 per cent over any other style. Send for Illustrated Catalogue fully describing every detail of construction; tells how and why the Western excels all others; it gives the facts—the proof. Learn what Western engines are doing for others. Send your name today—ask for latest issue, A6.

WESTERN GAS ENGINE CO.
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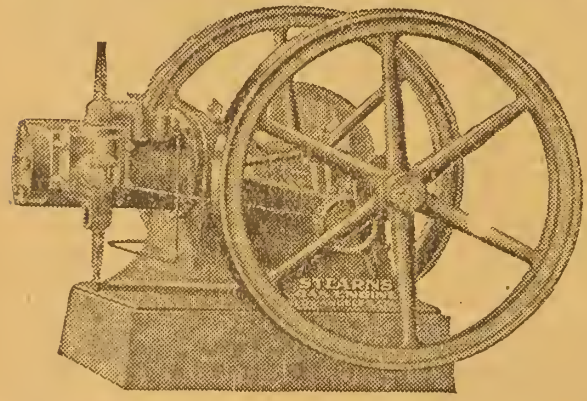
Portable Buildings

Made in all sizes and for all purposes. Cut shows Porch House No. 411. Three rooms 12 feet 4 5-8 inches wide, 33 feet 4 5-8 inches long. Height of walls 7, 8 or 9 feet. Made with single or double walls.
Send for Our Catalogue, which gives photographs, prices and weights of other buildings.

Burnham-Standeford Co., 522 First St., Oakland, Cal.

STEARNS GASOLINE OR DISTILLATE **ENGINE**



Has many points superior to any other engine.

Hundreds in Use

Every One Satisfactory

Built for California cheap fuel.

For further information, write

STEARNS GAS ENGINE WORKS 1001-3-5 NORTH MAIN STREET
LOS ANGELES, CALIFORNIA

NO, THIS IS NOT AN ARTESIAN WELL, BUT

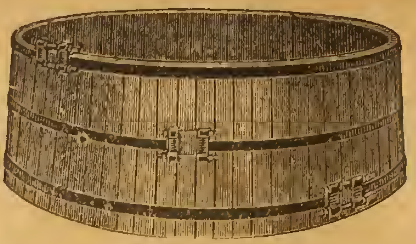
AN IRRIGATION PUMPING SYSTEM
SUPPLIED BY
S. J. SMITH MACHINERY CO.
POWER PLANTS, PUMPING MACHINERY AND WATER SUPPLY GOODS
212-214 S. Los Angeles St., Los Angeles, Cal.

THE COLUMBUS
Gas, Gasoline and Distillate Engine

Embodying New and Important features in design and operation.
Send for Catalogue E. All information furnished. Address

Columbus Machine Company
121 So. Los Angeles St. Los Angeles Cal.

When writing to Advertisers Please mention Cultivator



TANKS Stock Tanks
Water Tanks
Oil Tanks
Wine Tanks

Tanks for stock, oil, water, wine and cyanide. It will cost you one cent to get my prices. In stock, tanks from 1000 to 10,000 gallons. Get my delivered prices. I can save you money. An expert is not needed to erect my tanks.

R. F. WILSON MANUFACTURING WORKS
MAIN AND LINCOLN STS., STOCKTON, CAL.

Caustic Soda

60%, 70%, 74% 76%, 78%, 99%. Powdered and Solid. Full information cheerfully given. All goods guaranteed.

M. Bettman Co. 121 California St.
San Francisco

Mococo FERTILIZERS

WHAT'S THE USE OF TALKING?
FERTILIZING PAYS

Mococo FERTILIZERS

CHEMICAL FERTILIZERS ARE WHAT YOU NEED

But "any old Fertilizer" won't do the trick.

To make a success, the requirements of soil and climate must be carefully met.
We make a specialty of fertilizers for fruit farming also suitable formulas for cereals, vegetables, etc.
Our factory is the largest on the Pacific Coast, our goods are right and our prices are low.

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THE MOUNTAIN COPPER CO.
604 MONTGOMERY ST. SAN FRANCISCO

DEEP WELL PUMPS
FINE CYLINDERS
A.T. AMES, GALT, CAL.
CUP LEATHERS
SHALLOW WELL PUMPS

Protect The Hens

To Raise Fine Birds
You must first of all provide comfortable quarters.
Profitable Egg Getting...
success in poultry business demands it. It is not necessary to invest a fortune in your poultry house. It is not necessary to build a heavy expensive poultry house.

Use for the Roof and Sides the genuine

Pioneer

Rubber Sanded Roofing

Makes a Light Structure—solid, strong and absolutely weather-proof. That wear-proof surface of hard flint sand means years and years of extra wear without additional cost. Send for samples and prices.

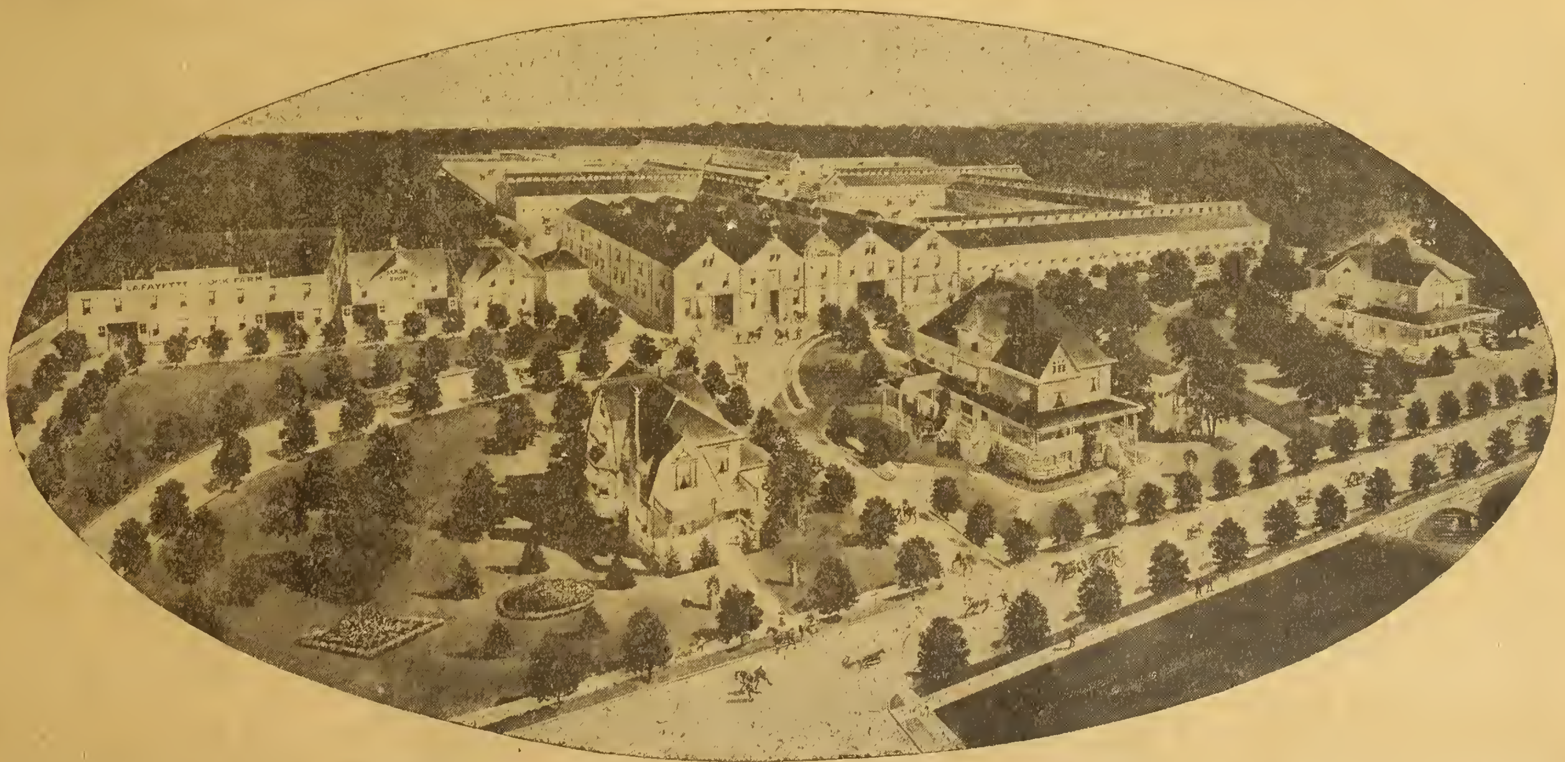
Our complete Roofing Guide "D" will tell you about every class of Roofing and Building Paper for every purpose. Send for it to-day.

PIONEER ROLL PAPER CO.
Los Angeles, California.

CALIFORNIA CULTIVATOR

DEVOTED TO AGRICULTURE IN ALL ITS BRANCHES

LOS ANGELES APRIL 13, 1906 SAN FRANCISCO



Bird's-eye View of the Lafayette Stock Farm, Lafayette, Ind.—J. Crouch & Son, Prop's. Largest importers in the world of Oldenburg German Coach, Percheron and Belgian Stallions.

Horse breeding is one of the most important industries in the United States The reports in the Year Book of the Department of Agriculture show large increase in the prices of the best grades from $10. to $35. during 1904, 1905 inclusive. Draft horses show the greatest increase for that period occasioned by the scarcity. January 1, 1905, there were 363,339 horses in California valued at $24,518,741. The increase in draft horses for breeding purposes, of the character of the Perchon, Clydesdale and other strains, is adding many thousands of dollars to California's Animal assets annually.

Mrs. C. A. McDonald is advertising White Wyandotte and Indian Runner Duck Eggs in the Cultivator.

Some thoroughbred Holstein bull calves are being advertised by Mr. J. M. Spencer of Compton, Cal., in this week's issue of the Cultivator.

The Santa Anna Chamber of Commerce has adopted a resolution in favor of suporting a local ice plant as against outside competition.

H. H. Holland advertises setting eggs for sale of the different breeds at very moderate prices. The El Oro Poultry Farm has an established reputation all over California.

Kellogg's Ant Paste, advertised in this issue, seems to have been giving very good satisfaction. The manufactory is at 1010 East Ninth street, Los Angeles, and their paste is sent by express. Local dealers wanted to handle their goods.

Fifteen thousand pounds of butter, the product of two creameries, was awaiting shipment at Tulare Saturday. The butter was sold to Los Angeles parties.

The Pacific Coast Borax Company, of San Francisco, offers free samples of their Twenty-Mule Team Borax, for cleansing anything in the way of milk cans and dairy utensils, as well as anything in the kitchen or laundry. Their products are sold by all dealers, in packages.

The old established G. W. Price Pump Company of San Francisco, are advertising Calahan Distillate Engines in this issue. It is a first-class engine at a very moderate price, and like all the rest of the goods sold by this firm, are guaranteed and satisfaction insured to the purchaser.

The Stearns Gas Engine works of Los Angeles, report a good season in the sale of gas engines, notwithstanding the heavy rains which have discouraged some in making investments in water lifting machinery this year. The Stearns people are putting up a good and economic engine and its merits are appreciated by many of the farmers who find it most satisfactory as a water lifting power.

For the first time in eleven years water is flowing over the top of the Sweetwater reservoir, and now every effort is being made to let out some of the water and prevent such a large amount going to waste.

M. E. Dillingham, the popular superintendent of the Southern California Poultry Show, and Wyandotte breeder of San Gabriel, has just imported one of the whitest of prize winning Wyandottes to his yards. We have seen the bird and it is a beauty in form and feather, and gives added value to Mr. Dillingham's fine strain of White Wyandottes.

REDOUBLED THE SIZE.

The dairy and creamery supply house of the O. J. Weber Co., has met with such success that it has already been compelled to occupy twice the space formerly used and has taken the room adjoining its former location, through the wall of which a large archway has been cut, making the two large rooms into one. Mr. Weber now claims the largest stock and store in Southern California. The present location is 555-557 South Los Angeles street.

SOAP AND RAZOR

Pay as much attention to the soap you shave with as to the razor. The razor may pull a little, but that's soon over. Poor soap will make the face sore, and that lasts. For your face's sake get out of the habit of using the soaps you wash with. If you don't know what else to use, send off to the J. B. Williams Co., Glastonbury, Conn. They will send you a sample of Williams' Shaving Soap free. If you don't like it, you had better let your beard grow than go on using laundry soap. If you do like it, and we guess you will, you can buy it at any drug store. The little it costs for your month's shaving will cut no figure when you know the soap.

What We Poultrymen Need

What we poultrymen want is to get a first-class feed that we can depend upon to raise our chicks and raise them without a loss.

We want a feed that will raise the LARGEST PERCENTAGE of chicks—a feed that will put LIFE INTO THEM and make them VIGOROUS, STRONG and HEALTHY.

And we also want a feed that will feed the chicks the first six or eight weeks at the smallest cost, or least expense, considering the amount of chicks raised—so that we can raise chicks until two months old at a cost of about 7 cents per chick for the feed—so that we can make some profit, as we need to make the money—it comes handy to us at all times.

We want a feed that will make the chicks thrive, and keep them free from bowel trouble, and also keep them from pecking each other—a feed that will make the chicks grow so fast that they can separate the roosters from the pullets at the age of five weeks, and at the age of two months send the roosters to market and get from $4.00 to $6.00 per dozen for them.

Above all, we want the feed that will raise the LARGEST PERCENTAGE of BIG, HEALTHY CHICKS.

Feed For Little Chicks

Raise chicks—raise lots of them, so that you will have a big flock next year. To raise them successfully you must have the proper feed that will fully nourish them so that their growth will be continuous and they will become big strong, healthy fowls. It dosen't pay to be stingy with the chicks—give them the best food you can get—it means so much to them later on. For the first four weeks feed the chicks COULSON'S SPECIAL DRY CHICK FOOD, which is composed of small pieces of cracked grains, also a variety of seeds and small pieces of charcoal, meat and bone. It therefore contains a variety of the best and most wholesome ingredients in the right proportions to promote the growth of the chicks and turkeys, and fully nourish them so they will reach the average weight of **three pounds each,** from four to six weeks sooner than when fed on common food. 100 lbs. of this **Special Chick Food** will feed 400 chicks the first three weeks.

There may be many other kinds of Chick Feeds which your dealer may tell you is just as good as Coulson's. But don't be deceived; insist upon having COULSON'S SPECIAL. Your success may depend upon it. If your dealer can't supply you, send direct to factory at Petaluma.

COULSON'S SPECIAL DRY CHICK FEED
THE BEST FEED FOR LITTLE CHICKS AND TURKEYS
COULSONS SPECIAL DRY CHICK FEED
100 LBS.
COULSON'S SPECIAL DRY CHICKFEED
MANUFACTURED BY A.R.COULSON & CO. INC. PETALUMA CAL.

A. R. COULSON, the Chicken Doctor, feeding a flock of young chickens with **Coulson's Special Chick Feed.**

This lot of 800 chicks were fed entirely on **Coulson's Special Chick Feed** up to seven weeks, at a cost of 2½ cents per chick. The first 25 days, each chick consumed an averaage of 1 cent's worth, and up to five weeks, 800 chicks were fed 400 pounds of **Coulson's Special Feed,** nothing else.

Figuring the Chick Feed at $3.50 per hundred, 4 sacks would be worth $14.00; or 1¾ cents worth to feed a chick up to 5 weeks of age, and it makes such **strong, healthy,** robust chicks, that are a pleasure to look at.

Chicks beginning life on Coulson's Chick Food—raised on **Coulson's Special Dry Chick Feed.**

Broilers sold when two months old for $5.00 per dozen.

Pullets began laying whe nfour months old. Hens that are champion layers—200 eggs per year hens, because they had the right start.

$1.00 a Dozen More

By feeding your Chicks on **Coulson's Special Dry Chick Food** they will be so large and plump that besides sending them to market sooner, you will get from 50c to 75c and possibly $1.00 a dozen more for the broilers or fryers than your neighbor who has chicks of the same age and who feeds some other kind of feed.

Try It This Year

Ask your dealer for COULSON'S SPECIAL CHICK FEED. Tell him no other kind is good enough for you. You want the best, and that's **Coulson's Special.**

FREE A nice Book **"Raising Chickens"** 104 large pages, 200 pictures. Interesting. Send 10c postage. Address Publishing Department
COULSON POULTRY & STOCK FOOD COMPANY, PETALUMA, CAL.

CALIFORNIA CULTIVATOR

Vol. XXVI—No. 15 LOS ANGELES, CAL., FRIDAY, APRIL 13, 1906 Subscription $1 a Year

Proper Care of the High Bred Horse

H. C. Beville, of Hollywood, has very recently come into possession of a very beautiful and valuable foal, through his well known mare, Pauline, known among horsemen in Southern California, as one of the finest and best bred animals in this part of the State. The cut of this mare and colt, which accompanies this article, does not do full justice to the pair. They should be seen in their natural position in the field to be fully appreciated.

The rearing and care of a thoroughbred colt, as well as the care of the mare is a subject of interest to all lovers of well bred stock, whether horses, cows, swine or pets, and the proper care of the mare and colt is a study which the owner must make to get the best results from both. A thoroughly informed horseman, A. Stenson, of Wisconsin, in the Farm, Stock and Home, gives his experience along this line in the following interesting paper which is printed herewith. The suggestions he makes in reference to the horse are practical, for we have proven them, in ownership and care of a thoroughbred horse in Iowa.

Mare and Foal.—The mare and little foal should be kept in a roomy box stall for three or four days; then they may be put out in a paddock, or small pasture, during the day, but taken in at night, for two weeks, at least. After that, they may be left out, unless the weather is bad. When the colt is about a week old, a light leather halter, with a short piece of strap attached, should be carefully fitted to the head. Every day pet and handle the colt a little. In a very short time he will learn to lead, with no pulling or straining of the soft, young joints. Teach the colt to eat grain with the dam as early as possible, then put in a small feed box, and give him his regular feed when feeding the dam. The horse's stomach is small, and from seven in the morning until three in the afternoon is too long a time to go without being fed. The noon meal should be simply oats. Give the heaviest feeding at night, when the horse can rest and have time to digest it properly. Unless a stable is kept clean and free from bad odors it cannot be healthful. The ventilation should be good, but there should be no drafts. To put a warm or heated horse in a draft is certain ruin. If a horse has become heated from a drive, or work, he should be thoroughly rubbed and walked in the open air until partially cooled, at least; then cover him with a woolen blanket. Never allow a sudden chilling of the surface. For at least an hour, only a few swallows of water should be given. People who disregard these common sense rules invariably have unsound and ailing horses.

Points on Grooming.—The process of grooming requires great practice and experience in order to remove all the deep-seated dirt and loose scales. Cleaning the legs is also an important point in grooming. In dry weather simple brushing out is sufficient followed by hand rubbing. In wet or windy weather, when there is mud, washing of the legs is generally resorted to. This practice, as it is commonly performed, should be condemned. It is not so much the actual washing that should be objected to as the fact that the legs are almost invariably left damp. This is a prolific source of inflammation sometimes running on to destruction of a portion of the skin, as in cutaneous quittor, erythema, etc. The mud commonly gets the blame, but experience shows it is not the mud, but the washing aggravated by bad weather, which produces these evils. If the legs must be washed, they should be rubbed until they are not only thoroughly dry, but warm. After this they should be bandaged.

Thousand Dollar Foal of H. C. Beville.
Rex Montgomery, sired by Rex Montgomery No. 2011. Dam Pauline, whose sire was Ike No. 728, the famous Kentucky saddle and driving stallion.

* * *

Pasture Mare and Foal.—The proper place for a foal is with its mother in pasture field, where there is abundance of water, grass and shade. But when this is impossible the mare should be worked as lightly as possible and fed liberally on milk-producing food. The production of milk in all mammals is facilitated by food of the same inherent qualities. Oats, corn, and bran are standard foods for this purpose for all farm animals; and if moistened the effect is still better. Grass should be supplied, and as far as possible take the place of hay.

Encourage the foal at an early age to feed by itself, and provide a trough to which it may have ready access. Oats more than any of the grains contain bony structure of young animals, and may be fed liberally without danger of overfeeding. A foal should be steadily developed from birth. No backset should be allowed. Give up the notion that the foal is just so much more profit derived from the mare—unless willing to put up with an ill-shaped and ill-conditioned foal, which will develop into a low priced horse, no matter how finely bred.

* * *

Stabling the Horse.—Some of the highest veterinary authorities contend that glanders is not contracted by contagion alone, but may be caused spontaneously through unsanitary surroundings. Strangles and influenza, also other serious diseases, are very often caused through the housing of horses in badly ventilated stables, and the constant breathing of vitiated air. In the general management of the horse the conditions under which he is stabled are therefore of the utmost importance. Though deprived of food and water, animal life can exist for a short period without much inconvenience, but continuous breathing of air is absolutely necessary to life. Hence air is the chief requisite of life; this being so, how absolutely necessary it is that the atmosphere surrounding the horse in his stable should be pure if the animal is to be kept in good condition and all diseases avoided. Unfortunately, too little attention is given to ventilation in most farm stables, more care being usually bestowed in making the stable warm than in admitting light and air. If we observe the natural habits of the horse we will learn the value of pure air for him. Where a shelter is provided for horses at pasture they will seldom seek its protection, even in the coldest weather, preferring above all things an abundance of fresh air. In different parts of England, where in the summer season horses used for pleasure coaches are turned into a pasture at night, they are found to do their work better and last longer than those confined in close stables. The nature of the work performed by the horse renders him especially liable to injury from breathing bad air; during hours of work in the open air the horse's lungs are extended to the fullest capacity in supplying the oxygen used up by his system under the strain of muscular exertion—take him then suddenly out of the fresh air into warm, moist air possibly poisoned with the effluvia of a carelessly cleaned stable, and the result cannot be other than very injurious. The muscles are relaxed, the deep, breathing lungs filled with vitiated air and the whole system weakened. In building a stable it should be so placed as to admit plenty of sunlight and air. Observe how a horse stabled in a box with open windows invariably seeks the morning sun; the sun-light is a pleasure to him as well as to man. Nothing can be more depressing than a dark, close stable. Windows should be placed above the horse and made to open on a swivel, thus giving perfect ventilation while guarding against drafts. The divisions between the horses should be low; though to at the head, which will not in any prevent biting at each other a few bars may be placed half-way down way prevent the free circulation of air. All drainage should be by means of an open drain behind the horses in the stable, discharging, if desired, into a covered drain outside so as to admit of thorough cleaning and flushing inside the stable—the outside drain being properly trapped so as to prevent any foul air passing back. In very cold weather warmth is better obtained by extra blanketing than through warmed air. With a fairly warm blanket the horse will suffer no discomfort in a cold stable, but will be all the healthier and stronger the greater the supply of pure, cool air.

Horse breeding is profitable or unprofitable according to the kind of horses you raise. If you breed to suit the markets—the big draft and the handsome carriage horses—you will have the horse-buyers after you and get big prices.

MODERN DAIRY BARN.

The Dairy Division of the Bureau of Animal Industry, Department of Agriculture at Washington, has just issued a small circular entitled "Suggestions for Construction of a Modern Dairy Barn." The plan of the barn shows that the structure embodies the best ideas in scientific and sanitary construction that are consistent with practicability and cheapness. We advise all interested in such a publication to send to the Secretary of Agriculture at Washington for a copy of it.

Deciduous Fruit Culture

BY J. W. MILLS, POMONA, CAL.

PRUNE TREES ON PEACH STOCK.

A grower asked us the other day if it were advisable to graft peach trees over to French prunes. We would not graft anything to French prunes in Southern California.

Peach is a good stock for prunes on good, well drained soil. On soil that is inclined to be wet, Myrobalan is better. We would not graft peach trees over to prunes at any rate. If the variety is of little value, graft them over to so emgood variety of peach. Unless the trees are on very rich land and are of exceptional vigor it will not pay to work the mover after they are over 10 years old. In Southern Californio we would work into Salwav, Henrietta or Lovell. For the northern deciduous districts the variety will depend on the purpose for which it is intended. Nearly al peaches do well in the central valleys of the State.

BORERS.

Borers are the bane of apple and pear growers but with a little precaution this need not be so. Apply a thick coating of whitewash to the entire trunk and large branches, from the leaves clear to to the ground. If the trees are small it may be quickly done with a brush. Make the wash a little thinner than cream and add a handful of sulphur to a bucketful of wash, and half that amount of salt. The sulphur will send off fumes that are distasteful to all kinds of animal life. The salt makes the wash stick to the trees. The object of the whitewash is to prevent the bark from becoming sunburnt, or are not slightly injured by the sun. If borers have already entered the tree, there is no way of getting rid of them except to dig them out. If the worms have just hatched and have not entered beneath the bark, painting with soft soap and wrapping with any kind of paper (except black paper) will kill them. This is not theory, but facts, we having successfully treated ten acres of Bartlett pears after they had become infested with the minute worms which could be seen just beneath the thin transparent bark. The young borer seems to need a little dried bark and plenty of hot sun to start him on his work of destruction. These suggestions will apply to any trees subject to the attacks of borers.

PRUNING YOUNG APPLE TREES

The treatment of young apple trees should be quite different from that of most other deciduous trees when it comes to the shaping of them.

We at one time pruned some apple trees when they were in their second year, just as we would have done had they been peach trees. Two years later we saw our mistake. We had to cut out a good many branches that started from the pruning they received when they were two years old. Our experience with apple trees of all ages up to fourteen years, convinces us that an apple tree should not have more than three main branches, and these should be distributed so that they do not come out near to one another or opposite. These should not have permanent branches closer than two feet from the bases. It is well to allow small brush to grow over the bases of the main branches for shade.

Where limbs fail to branch out and fill out the tops or vacant places, they should be cut off at the point where the branching is desired. When the branches run up too highh, they should be cut back and always to a lateral which is growing in, if on a tree that is inclined to spread, and to one which goes outward in a compact tree. Open spaces may be filled in this way. If these methods are followed, the trees will become shapely and will not require much pruning at any time. Some apple growers do not recommend pruning at all on young apple trees, but we think some is better. If the pruning is severe, the trees will only make a more vigorous growth and will have to be cut back again. Fast growing and rank trees should be pruned less severely than feeble ones. The Winter Nelis pear is a striking example of the first. It is useless to try to shape a young tree of this pear unless the branches are tied in place. If it is left to itself, it will soon finish its rampant growth when it may be shaped.

CLIFORNIA NEWTOWN PIPPINS.

There appear to be various indications that Californian Newtowns are becoming year by year more dangerous to handle. Last season you had a serious blight which we presume might very easily recur, and which moreover might not develop early enough to place you on your guard against handling them. This year the apples appear not to be keeping so well as heretofore, although there are no noticeable features which bring about this result. In previous seasons we have experienced unhealthy cores, but that we presume was an exceptional characteristic.

So far as we can judge these various increasing dangers probably arise from continuous cropping without proper fertilization, and unless steps are taken by orchardists to replace the consequent exhaustion of the soil our view is that it is only a question of time—and probably only of a very short time with respect to old orchards—before the quality of California Newtowns will be so much impaired as to seriously prejudice their value in this market, and to correspondingly jeopardize the business of handling them. Our view is that the trees are being called upon to a greater extent than they are competent to perform, and that nature will fail to respond to these continuous and exhausting demands.

We shall be glad if you will take both scientific and practical advice — science and experience should go hand in hand in these matters—with the view of determining what if any foundation there may be for our apprehensions. Incidentally, of course, you will doubtless advise orchardists to fertilize their orchards in any event, and we feel sure that the expense of so doing will be fully compensated for even if such fertilization may not be absolutely necessary from the point of view to which we have referred.

We, of course, do not profess to have any knowledge on such matters, and merely draw your attention to the matter because it seems to us a most reasonable thing that continuous cropping must either exhaust the soil or the trees, or both, unless something is done to restore the wastage of fertility and strength. The rule that prevention is better than cure particularly applies in this case, and fertilization should be provided well in anticipation of exhaustion, the reinstatement of fertility being a much more difficult matter than the maintenance of it. On this point we do not doubt that you will fully agree with us if in point of fact, as we suppose, there is some cause for apprehension.

Our expectation is that the expense of fertilization would be compensated for by the better keeping qualities of the fruit, even if large supplies in the early Winter months should as heretofore depress prices during that period.—From European agent of Balfour, Guthrie & Co.

* * *

So far as we know, the trouble is a new one, and its causes are not understood. I cannot, therefore, indicate to you any definite line of experiment with respect to remedy for the trouble. Its nature is such that on the whole it seems idle to attempt to remedy it by any nitrogenous fertilizer. Such difficulties are more generally present in fruits grown in soils with an excess of organic matter. I would, therefore, suggest that mineral fertilizers be used in the form of Thomas Phosphate, and of potash sulphate in kaenit, which would add chlorin to the soil.

The antidote to such diseases of fruits is usually lime and phosphoric acid, especially the former. Inasmuch as the Thomas Phosphate carries both, I think it most likely to produce the best results. To make the first year's experiment of value, however, a rather large dose should be used, and plowed in deeply, so as to come in contact with the feeding roots. To put it on the surface, or harrow it in, would be entirely inconclusive, as then it might not reach the feeding roots at all this season. I should advise 500 pounds per acre to make the experiment cogent, and of potash sulphate not less than 150 pounds—the latter need, of course, not be put in so deep as in the present condition of our soils and weather it would work itself in fast enough.

Regretting that I cannot give you more definite information of the nature of the disease, I make these suggestions as the best available.—Extract from letter of 26th March, 1906, from Prof. E. W. Hilgard, University of California, Berkeley, to Balfour, Guthrie & Co., San Francisco.

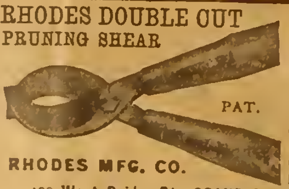
Government engineers are at Woodland for the purpose of making extensive investigations as to the modes of irrigation, under the joint appropriation of $150,000 by the State and Federal governments. They are inclined to believe that the water here is used extravagantly and will make a test to ascertain the percentage of waste in ditches. They will also make experiments on grain and corn lands, with a view of determining the practicability of irrigating those lands and if water replenishes the fertility of the soil.

District Attorney Evans of Riverside County has rendered an opinion that travelers, tourists and visitors temporarily in California should not be taxed for personal property which they have brought with them for their comfort or pleasure.

Reports indicates that the fishing season, which opens on the 1st of April, will be late on account of the heavy storms hich have swelled the mountain streams to twice their size, thus giving the fish plenty of feed for a month or two.

The trustees of Compton High School will beautify the grounds by planting about 100 ornamental trees consisting of sterculias, acacias, crepe, myrtle, genista, spirea and Montmyrtle pine. Let their example be followed by others.

Hens should receive plenty of exercise when laying the eggs you intend to set.



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Practical Farm Science

SPRING MANAGEMENT.

Some Valuable Hints Concerning Stimulation to Induce Eearly Breeding.

This is the most important season of the year for the bee man; he should now examine each colony for the purpose of ascertaining whether or not the honey stores have been exhausted, also how brood rearing is progressing. The Apiarist should bear this in mind the colonies that give the largest surplus in the honey season are generally very strong in the spring There is no better way to get colonies strong early in the spring than stimulated feeding, combs of honey do not in any way give the stimulus that thin syrup made of eaqul parts sugar and water or better honey and water if honey is very thick dilute one part honey to five parts water. Out door feeding is the best for all purposes, however, if one is located where there are numberless bee trees, it would be impossible to do so, or if located where there are two or more bee men however, one can generally make satisfactory arrangements, either feeding together, or by paying the party feeding a small sum for sugar and honey. A good out door feeder can be made very cheaply. For one hundred stands make two small V shaped troughs from fourteen to eighteen feet long. Place in these throughs shavings or excelsior; this will keep bees from drowning in struggling against each other. Where it is impossible to feed in open air you will have to feed in the hives. You can do this by pouring the feed on combs or better, put feed in a Doolittle division board feeder. You can get them from any supply house or you can make them yourself. Take an ordinary hive frame; on the sides of frames tack or nail these boards; then take melted wax and pour in the feeders to seal the cracks and stop leaks. It is to be used inside combs. If brood rearing is increasing nicely, a very good pian is to spread broad. Take one or two combs of cappep brood from center of hive placing them inside of brood nests putting worker comb in their place. Now is the best time of the year to cut drone comb, replacing with sheets of foundations.—M. D. Whitcher.

ITALIAN, BLACK AND HYBRID BEES.

The black or German bees were imported into this country some time in the seventeenth century, and they are now widely distributed from the Atlantic to the Pacific. They were the only race of honey bees in this country up to 1859. Through the agency of the Department of Agriculture, the Italians were imported direct from Italy in 1860. There had previously been repeated individual effort to procure Italians bred in Germany, where the race had been introduced some years earlier, and a small number of queens had been landed here alive in the Autumn of 1859, but most of these died the following Winter, and the few remaining alive seem not to have multiplied as rapidly as those obtained in Italy, by a purchasing agent of the Department of Agriculture, and landed here early in 1860. Their good qualities were soon appreciated, and they rapidly became universally distributed.

A few years after the Italians were introduced, races of Cyprians, Carniolans, Palestines, Egyptians, Syrians and Tunisians were imported to this country, but none of them had the qualities that Italians possess, and today the latter are by far the most popular bee in the United States. The Italians can readily be distinguished from other races; they show across the abdomen when the latter is distended with honey not less than three yellow bands. They are much easier handled than blacks or hybrids, are better honey gatherers, and more prolific. Blacks and hybrids can in no way be compared with Italians. Hybrids are mongrels produced by blacks and Italians crossing. They are generally so variable in temper, honey gathering and prolificness that nothing can be said in their favor. Occasionally we will find a colony of hybrids that come up to the Italians, but one can never get good results from them when used as breeders. For instance, say we have a dozen daughters of a hybrid queen, and introduce them in as many colonies; we will soon find that among the dozen there are no two colonies alike. Some will be very cross, making it very disagreeable work when handling them and from others we will get very little surplus, and generally we will find three or four that never had more than three to four frames of brood at a time. And here is a fact it is well to remember: a queen that cannot supply two thousand eggs per day under fairly good conditions is not profitable. Three thousand eggs per day is only a fair average, and a good queen will often come up to five thousand.

A colony lacking sufficient bees seldom gives a surplus.

M. D. Whitcher.

How to keep boys on the farm.—The question of how to keep boys on the farm is as perplexing as it is important. The Rural New Yorker publishes the following article, which may give an idea as to a posible solution of the question:

"Many years ago I was talking with Gen. Sheridan in Chicago. He told me that when he was a major of cavalry in Arizona he was in charge, on behalf of the government. of a tribe of Indians, the Colorados, and his duty was to confine them to their reservation. His principal difficulty was on account of their nomadic character; no matter what effort he made to make their homes comfortable for them, still they would leave them and travel away, and had to be brought back by the cavalry at short intervals. He finally decided that if he could give them some interest in the way of live stock it might be an anchoring influence, so he succeeded in having the government give them a stock of horses. That, however did not answer the purpose, for they drove the horses and continued to travel with the horses and mares and colts as they had before. Then he tried the experiment of giving them cattle, but after the cows had produced calves in the spring of the year the Indians traveled, and the stock traveled with them. Finally he hit upon the idea of giving them a stock of poultry, and the squaws promptly realized the value of the product of the hens in the domestic economy, became attached to the eggs and attached to the chickens, and when the bucks proposed that they should make their summer migration, the squaws said "No." The result of the poultry experiment was that for the first time he was enabled to anchor these Indians to the place where the government desired to keep them.

There are many boys on the farm today who could be anchored to the old home if they could be interested in a good hen."

As a remedy for scours in goats, J. L. Fisher, of Kellogg, Oregon, recommends in the Pacific Homestead, the use of oil of orioto. He says: "It is very effective and easy to administer to the afflicted mohair yielder, being given in tablespoonful doses."

Chas. H. Shinn, supervisor of the Sierra Forest reserve states that the department has increased the number of sheep to be pastured in the reserve from 15,000 to 20,000.

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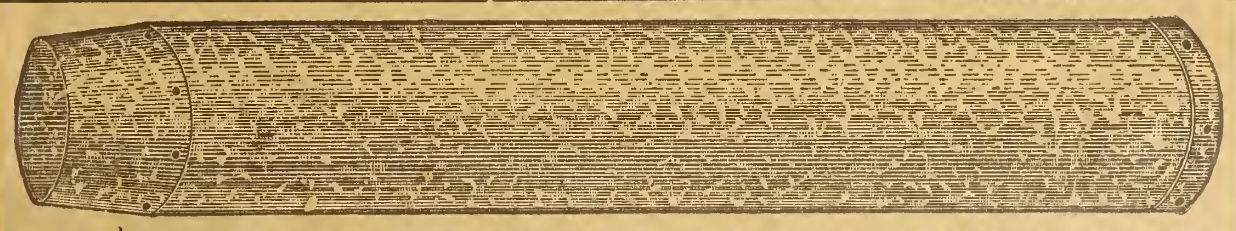

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California Horticulturally

BY JOHN ISAAC, SACRAMENTO, CAL.

EASTERN PEACH CONDITIONS.

Later reports from the Eastern peach sections are rather more favorable for a crop. In the northern sections, Illinois and Michigan, very much damage has been done by frost, and it is probable that there will be a short crop, but south of Washington there is a chance for a good crop. In a letter just received from a Washington correspondent he says: "I am pleased to say that the buds of peaches, plums and other fruits are not injured to any great extent in this section. I saw peaches in blossom from Atlanta northward, and reports are that there has been no serious damage that far south. They are hurt somewhat, however, in the South."

FUNGUS DISEASE IN THE PEACH SECTION.

Peach growers in Northern California are very much worried this season with a form of blight which many believe to be similar to the pear blight. The new leaves and tender shoots will wither and shrivel up in a day, without apparent cause, and in many cases a sticky substance oozes from the twigs or trunk. From investigations of this disease which have been made it is believed to be rather a fungus disease than of bacterial origin, and is probably similar to the shot-hole fungus of the apricot. It has been noticed to some extent in former seasons, but is much more virulent this year than usual, especially in orchards in which the spraying was delayed in the season. In orchards where the salt, sulphur and lime spray was used early in the season there is much less indication of the disease. This would seem to prove that it is of fungoid origin and that the spores were caught and killed by the early spraying before they had become sufficiently established to resist. Very many of the peach orchardists have deferred their spraying until late this season on account of the continuous rains, and for the reason that by late spraying the work of the peach worm is checked. The season has been particularly favorable for fungus growths, and is is more than likely that the general prevalence of this growth can be accounted for in this manner.

TO CONTINUE PEAR BLIGHT WORK.

On the request of Governor Pardee and Mr. Beard of the Valley Development Association, the United States Department of Agriculture, through Dr. Galloway and Dr. Wood of the Bureau of Plant Industry, have determined to leave one of their experts, Mr. Swingle, in the field until the early part of June and the infection period of this season is past. It is possible that the work will be continued in our State next season, as there has been an increase in the appropriation for this work, and California is at the present time the most important section so far as pear growing is concerned in the Union.

HEAVY RAINS DO DAMAGE TO FRUIT CROPS.

The last two weeks have brought about a decided change in fruit conditions in the upper country. Heavy and almost continuous rains have prevailed all through the blooming season, and this has had its effect on the crop. In many sections the pollen was literally drenched from the bloom, and in consequence the prospects for a heavy crop of early peaches is poor. Late peaches promise somewhat better. Almonds have been affected, and plums and prunes have suffered. It is still impossible to predict what the coming crop will be, probably fair, but early promise of a heavy crop will not be realized.

THE STATE FARM LOCATED.

At a night session of the State Farm Commission, held in the Capitol building on the night of the 5th instant, the Commission finally decided to locate the State Farm in Yolo County, near the town of Davisville. The choice is a most excellent one, as there are more advantages combined in this location than any other one which had been offered. Davisville is some 12 miles from Sacramento on the main overland road. It is the junction of the Sacramento Valley roads which run on the east and west sides of the valley. It is on the direct line of the Oregon road and within easy reach of the whole of the Sacramento and San Joaquin valleys by rail. It is centrally situated so far as the State is concerned. The site selected is bordered on one side by the Eastern overland road and on the other by the Oregon road, so that all travelers coming into the State over either road pass along it. It is consequently convenient for travel, and, with a spur built into the grounds, everything can be brought in and taken out by rail. The soil is excellent, the deep alluvium, with an admixture of sand, characteristic of most of the Sacramento Valley soil. Arrangements have been made for an abundant supply of water for irrigating, and the climate is that of interior California. Altogether the Commissioners could not have hit upon a more favorable location, and both they and the people are to be congratulated on the choice.

TOBACCO CULTURE IN THE SACRAMENTO VALLEY.

Experiments in tobacco culture have been carried on in different parts of the State from the earliest periods, but for some reason they do not seem to have met with success. Tobacco has been grown quite extensively in the vicininty of Cloverdale, and local reports credit it with good qualities. There seems to be no good reason why, with our vast range of soil, climate and various conditions, tobacco growing should not prove a great success in some sections. It has been asserted that while we can grow good tobacco, we do not understand the proper method of curing it after it is grown, and that the fault lies in the manipulation. Whatever the reason, it is a fact that while we have carried on numerous experiments in tobacco culture, it has never become a noticeable industry in our State. The matter has been brought to the attention of the Department of Agriculture, and a quantity of seed of different varieties of tobacco has been sent to the Valley Development Association, by which it is being widely distributed for experiment in the Sacramento Valley, and variety for that location may be found and this industry be established in our State. If the growing is accomplished with any degree of success an expert will be sent out to instruct the growers in the proper methods of curing and preparing the weed for market. Tobacco growing is one of the most profitable of all forms of agriculture, and it is to be hoped that the experiments now being made in our State will prove successful and open to us a new industry.

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Apple Trees 5 to 7 feet, one year old. $20 per 100. Grown in Riverside. Clean and healthy. *Cornichon Grape Vines,* $25.00 per 1000.
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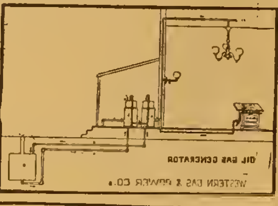

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With the Citrus Growers

BY J. W. MILLS

MANURE FROM THE POULTRY YARD.

It is commonly supposed that pure hen manure is a very rich fertilizer. According to the analysis made by different experiment stations one hundred pounds of fresh droppings contain .05 of a pound of phosphoric acid, .56 of a pound of potash and 1.10 pounds of nitrogen. According to the ruling prices of fertilizers 100 pounds of such manure would be worth about 20 cents or $4 a ton.

Poultry manure has to be handled so that it will not dry out or its value will be greatly reduced. It must be borne in mind that chickens are their own dentists and swallow their false teeth at each meal. It will be noticed that the small stones and even the sharp pieces of glass that chickens swallow with their food are found in the manure with the edges taken off and rounded. This silica is disolved by the digestive process of the chicken, and part of the potash and phosphoric acid that would otherwise be free in the dried manure becomes encased in this silica when it solidifies which it does on drying, thus rendering it insoluble and consequently not immediately available.

The most profitable way to apply poultry manure is in the irrigation water. If the manure is gathered every morning and placed in covered boxes or barrels and shoveled into the irrigation furrows at each irrigation practically every particle of it is utilized.

Stable manure and poultry droppings cannot be profitably used together, as one requires to be kept moist and the other is best preserved if dried as soon as possible. Should the stable manure be kept moist it would dry out after spreading and before it could be turned under and then the poultry manure would suffer.

PROTECTION AGAINST FROST.

Five years ago extensive experiments were made in smudging to prevent freezing in the citrus groves of Southern California. The Riverside Farmers' Club did good work in collecting data on the subject. It was found that the temperature could be kept two to four degrees higher when smudging was practiced co-operatively over considerable area. Single individuals could do practically no good with smudges when the temperature got down to the danger point. This smudging proved an additional expense that very often consumed what little profits there might have been realized.

Gradually those situations which were sometimes visited by freezes which defied the smudges are changing their orange groves to some other lines of farming, and where water is abundant and cheap alfalfa has been planted. Gradually the orange groves are being pushed to higher elevations and the lower lands where once were thriving groves in certain districts are adding in other ways to the substantial growth of Southern California. The job of fighting Jack Frost is an endless one and takes away the pleasure of citrus growing where it has to be waged, and very often all the profits are consumed. These conditions are not indicative of decline or even evidence of instability in the orange business. It is merely a readjustment of the business upon a safer footing. The lessons had to be learned and some one had to learn them for the benefit of their followers.

COVER CROPS.

By the term cover crops, we refer to those plants of the legume family such as peas, beans, fenugreek, burr clover, vetch, alfalfa or other varieties which produce the nitro culture bacteria in nodules on the roots.

As a source of supply of nitrogen and humus they are of incalcuable value, being more effective and much cheaper than any other source, and are a much better form of plant food than the nitrogen derived from nitrate of soda or dried blood, which are both expensive.

In soils deficient in a supply of the bacteria which produces the nitro-culture they can easily be obtained and the number increased by inoculating or vaccinating the soil or seeds with the nitro-fixing culture which has been supplied free by the Department of Agriculture, Washington, and on land where no leguminous crops has previously grown it is always advisable to practice inoculation before planting the crop.

There are many varieties of leguminous plants adapted to the soil and climatic conditions of Southern California, and some that have given good results for use in the citrous orchards are: The Canadian Pea, Prussian Blue Pea, Smooth Vetch, Burr Clover, Lupins, Sweet Clover, Yorkshire Hero Peas for winter use and the New Era and Whip-Poor-Will Cow Peas for summer use have all been successfully tried. The Burr Clover, being indigenous to Southern California, is an excellent cover crop, as it grows well in the shade of large trees where peas would not thrive, and its roots show multitudes of nodules. As a summer crop, the Whip-poor-Will Cow Peas seem superior to the Cow Pea, having heavier tops and an unusually long tap root, specimens having been examined that show a tap root over six feet long. This is an ideal subsoiler, as it forces its roots down into the heavy soils, and when plowed under and decayed leaves a hole down which the irrigating water can soak deeper than by any known subsoiling. For use in an orchard the winter cover crop should be planted about September 15th or October 1st, and the soil should be previously thoroughly irrigated and cultivated and the ground left furrowed out in case winter irrigation is necessary.

An ordinary fertilizer drill, with the outlets sufficiently reduced, is an effective implement for sowing pea or vetch seeds.

The crop should be plowed under while the vines are green and full of sap, usually from the time the plant blossoms until the pod is formed, and always before the vines become too high to decompose quickly. One of the best implements for this purpose is a disc plow, as it will completely cover the vines in hard or soft soil with well pulverized dirt. On my own orchard I have completely covered vines of peas and clover with a disc plow that were so rank and in such masses it was impossible to use an ordinary walking plow even with rolling-coulter attached.

The benefits derived from using a cover crop are numerous aside from the value in supplying nitrogen and humus. They are equally as valuable on heavy soils as on light land, as they make heavy soil light and light soil heavy.

On light soils they increase the humus and thereby increase its beneficial effects in conserving moisture and acquiring gases from the air and render the soil more capable of retaining the other fertilizers that are applied.

One hundred pounds of soil heavy in humus will hold 194 pounds of water. A sandy soil only 25 pounds to 100 pounds.

On heavy soils the large amount of green matter in cover crops when plowed under has a tendency to divide and lighten the soil by its mechanical action, and its fermentation produces chemical reaction that decomposes the minerals in the soil.

Cover crops are also of value in making the potash in the soil better available as plant food.

One prominent orchardist of Riverside has an increased production of "fancy" fruit each year as a result of using cover crops.

A Covina grower never has coarse or puffy oranges when he grows a cover crop. Mr. J. B. Neff of Anaheim finds it materially reduces his irrigating expenses on his walnut orchard. Nitrogen and humus we must have, and in no other form can they be secured as economically and as well adapted for plant food as in cover crops. In selecting a cover crop one should endeavor to learn by experimenting which is the best variety for his soil and locality and watch carefully the development of each kind tried.—B. F. Thorpe.

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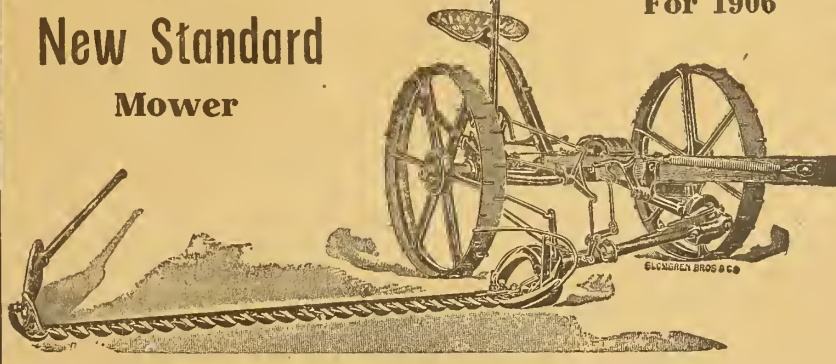

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The Ornamental Garden

BY ERNEST BRAUNTON, LOS ANGELES, CAL.

ETHERIZING PLANTS.

Some curious and successful experiments are now being made in Europe with ether, the object being to ascertain whether it can be used to advantage for the purpose of forcing hothouse or other plants. The ordinary course is to wait until the first frost has stripped the leaves from the plants, thus permitting them to take for a season that repose which all living creatures need. If vegetation could be arrested and repose begun sooner, it is evident that the plants would blossom much earlier next season, and this is precisely what the experiments with ether are designed to accomplish.

The ether employed is the sulphuric or etylic. When applied to plants it acts on the nutritive and other materials which are in their vessels during the period of active life, from March to October, and thus arrests the circulation of the sap.

If a phial of ether is placed under a lilac, an azalea, or any other plant of a similar nature the vapor of this very volatile liquid will quickly envelop the branches and will thus cause the leaves to fade, and at a given moment will arrest growth in the same manner as frost arrests it. In other words, ether shortens the period of vegetation and produces the same effect as the first frost.

The best results with ether can be obtained between July and the beginning of September. The plants to be treated should be placed in a dry room, or, better still, in a box which is entirely closed and the temperature of which is not too low. The ether is poured from outside into a vessel which is hung within, and the opening must then be promptly closed so as to avoid any waste of the vapor. This operation should be done during the day, as ether is highly inflammable.

CARE OF POT PLANTS.

Turn your plants in the window to prevent them from becoming one-sided. Do this at least one a week. Keep them perfectly clean at all times If cleanliness is next to godliness among men and women, it is next to healthfulness among plants. Indeed, plant health is largely dependent on it. Leave decaying foliage on a plant, and let dust clog the pores of it, and vermin breed at will, and in a short time you will have a plant hospital to run. Stir the soil to prevent its becoming crusted over. If the pots show green mold on the outside, scour it off promptly, and examine into the condition of the drainage. If this is what it ought to be, few pots will become moldy.

A FINE COLEUS.

Coleus thyrsoides is a new departure among coleus by being a desirable flowering plant. It more resembles a salvia than a coleus, producing long spikes of quite showy blue flowers.

THE CHRISTMAS ROSE.

The good, old fashioned, "Christmas rose" (Helleborus niger) is almost a total stranger in California, though why it is hard to say. Although they thrive best near the coast, where they can get the sea air, they do well anywhere if not placed where the hot mid-day sun can get at them.

GENERAL CULTURE OF CACTI.

The members of the cactus family are exposed to widely different temperatures in their native habitats, owing to the extent of the American continent over which they are distributed, but also the great elevation on the mountains of those regions at which some are found, and it is principally in regard to heat that the treatment of cacti has to be varied. A large number, probably the majority of known species, frequent the desert-like plains and the rocky, volcanic districts of Mexico, where they grow and flower under the fiercest tropical heat, not only uninjured, but positively luxuriating in the burning rays of an unclouded sun. There for the greater portion of the year the soil is parched and the atmosphere dry, and no other plants can exist except those which have become either resembling their cactus neighbors in developing a succulent growth containing an abundant store of fluid support, or possessing foliage protected by a thick impervious, leather-like epidermis, which effectually enables them to withstand the rapid evaporation constantly proceeding in such regions. It is not easy to reproduce these conditions artificially when cultivating the plants in our climate; we can, however, insure a sufficiently high temperature with the requisite aridity of soil or atmosphere and this seems all that is needed, though undoubtedly the maturing effect of a roasting sun is missed to a certain extent.

Nearly all the family need a free exposure to the sun; but even amongst the tropical species there are exceptions to this rule, for Rhipsalis and Epiphyllum, being epiphytal in habit, succeed well in moderate shade and can indeed be associated with such moisture-loving plants as orchids and ferns.

THE INDIAN LOTUS.

The lotus, botanically known as Nelumbo, is a plant of such remarkable interest and beauty that it must be give more than a passing word. Writers who have made its history a study state that it no longer grows wild in the Nile, and perhaps was not a native of Egypt. It seems to have been revered in India as well as Egypt, from the dawn of history; and it is not impossible that it traveled from the former country, where we know it is indigenous to the banks of the Nile at a time so remote that even the Egyptians of the earliest historic dynasties may have believed in its local origin. In these later days it has proved itself to be equally at home on the western continent. The lotus has been naturalized in California, one instance being in East Lake Park, Los Angeles. As to its culture it prefers a heavy soil well enriched. It may be grown in a large, shallow wooden box submerged in a fountain; or a more liberal space may be given to it, in proportion to the size of your basin or pond. The roots are tuberous, and shaped like bananas. If it is desired to transplant them, it should not be done until the growing season arrives. There are eight or ten varieties in cultivation here.

The Egyptian lotus has rosy petals, shaded to a white at the base.

Nelumbo roseum plenum is deep, rose red, full and double, like a peony or the rose Paul Neyron.

Nelumbo album plenissimum has pure white flowers with one hundred petals.

CALIFORNIA OAKS.

Our readers may have some interest in a brief description of the oaks native to this State. We have many that are worthy of a place on every farm and some would adorn any city garden.

1. Quercus agrifolia. Field oak, 'Eneena." Central and Southern California, 20-40 feet.

2. Q. Breweri. Brewer oak. Bush or small tree, western slopes of the Sierra Nevada, from northern part of state south to Tulare county, 12-18 feet.

3. Q. Californica. Kellogg oak. Black oak. West slope of Sierra Nevadas for nearly the entire length of the state, sometimes a low shrub but often 80-100 feet.

4. Q. chrysolepis. Golden leaf oak. Maul oak. Found quite generally throughout the state, mostly in canyons; has two distinct varieties; var. Palmeri, and var. vaccinifolia, from a scrub to a tree, according to locality 20-40 feet.

5. Q. densiflora. Tan-bark oak. Chestnut oak, from northern boundary to Santa Ynez mountains, Southern California, on the coast ranges, in some places but a few feet high, and in others 40-60 feet.

6. Q. Douglasii. Douglas oak. Blue oak. Central California, 20-30 feet.

7. Q. dumosa. Scrub oak. From San Francisco, south to the San Bernardino mountains, and on the Channel Islands, where it often becomes tree-like, in both habit and size. North of San Francisco var. revoluta is the common form.

8. Q. Engelmanni. Engelmann oak. Confined to a narrow belt 50 miles wide in Southern California. 40-60 feet.

9. Q. Garryana. Pacific post oak. Northern California, near the coast. 60-70 feet.

10. Q. lobata. Valley oak. The monarch of the family in this State. Valleys of Western California from Redding south to Tejon Pass. Often found with trunk nearly 20 feet in diameter. Top nearly 200 feet across, and often over 100 feet high.

11. Q. Sadleriana. Sadler oak. A scrub oak, forming thickets in a limited region in Northwestern California. 3-6 feet.

12. Q. Wislizeni. Live oak. From the slopes of Mt. Shasta to southern line on Channel Islands. Trunk frequently 4-6 feet in diameter. 50-80 feet.

Fodder does not make a very good food for the horse, it being too rough. Hay or straw is better for winter feed.

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In the Vegetable Garden

BY ERNEST BRAUNTON

THE PEA FAMILY.

Representatives of the legume family are found in all climates and countries. The pea and bean grow rapidly, three to four months being sufficient to bring most varieties to maturity, and consequently they can be grown in the short summers of far northern lands, the pea, the most hardy of them all, at least as far as 67 degrees north latitude; and, as they also stand high temperatures, they are largely cultivated in tropical and subtropical regions. The pea is the favorite legume of middle and northern Europe, while in the Mediterranean countries the bean is grown more generally than the pea. In nearly all sections of our own country both the pea and bean are grown extensively, and are even exportel. Peanuts of a superior quality are cultivated in California and the southern states. So far as can be learned, the lentil is at present grown in this country only to a small extent in the southwestern portion of the United States.

SUMMER BLIGHT OF TOMATOES.

Under the term of "blight" is commonly designated in California a tomato disease which is known everywhere in the State in greater or less abundance, and occurs not infrequently as the cause of losses up to 100 per cent of plants between half-grown and maturity. This is here termed the "summer blight," to distinguish it from another disease to be described later. The disease seems to have been known longest in its severe form in the San Joaquin Valley.

Losses of entire fields of good-sizel plants have been known there for several years, and in fact this has come to be almost the rule in that section. In Alameda and Santa Clara counties the disease has frequently been seen on occasional plants, but has not been considered of any serious importance. In Southern California this blight has been the cause of considerable loss in recent years. In 1905 the disease was probably more general than ever before, completely ruining many fields in Southern California, almost all in the San Joaquin, and causing a loss of from 1 to 50 per cent of the plants in fields all over the State.

Pending further investigation of this disease, little can be said concerning methods for its control. Great care should be taken to make the seed-beds of absolutely new material, and to plant the field where the disease has not occured. Spraying the tops is perfectly useless, since the trouble is entirely below the ground. Experimental plantings are planted for this year, on infected and new soil, both in the seed-bed and field, and on sterilized soil. Methods of soil treatment will also be considered. The matter of resistant varieties is also worthy of some attention, particularly in selecting seed from resistant plants in fields where the disease is abundant.

GARDEN FERTILIZERS.

Most soils are benefited by the addition of humus, a name applied to any thoroughly rotted vegetable or animal matter. Humus may be known by burning a small quantity of soil on a red-hot shovel. If it gives an odor of feathers, it must contain humus from animal matter; if an odor straw, it contains humus from vegetable matter. Humus forms the richness of nearly all good land, and rarely is there too much of it.

In close-grained, sticky soils, which have a tendency to bake, the humus produces a looser texture and a better balance in the retention of moisture. On a loose and leachy soil it brings the grains closer together and promotes chemical activity. At the same time it supplies plant food. Leaves, garden refuse, and barnyard manure made into a compost and allowed to decay make good humus. The pile must be turned over several times each year until it is thoroughly broken up into a mass of even texture.

Lime may very often be added to a soil with good results. It corrects acidity, makes clay soil more friable, and holds sand closer together.

MULCHING VEGETABLES.

Whether mulching shall be used in a particular case depends also upon the vegetable to be grown. Early spring vegetables requiring only a few cultivations can usually be grown more cheaply by cultivation than by mulching. Furthermore, very early mulching, before the ground has become thoroughly warm, is apt to retard the development of the vegetables.

On the other hand, summer or fall vegetables that require frequent cultivation throughout the season are grown as a rule with less labor by mulching than by cultivation. Furthermore, the mulch can often be spread at a time when other farm work is not especially pressing. If cultivation alone is depended upon, the garden may be cared for well enough early in the season, but is almost sure to be neglected later, when the rush of summer's farm work is on and when, owing to dry, hot weather, the need of proper care is most imperative.

The fact that most vegetables, especially the more tender kinds, cannot be mulched until they have become well established and the weather has become warm, thus requiring some preliminary cultivation, certainly increases the labor required in growing mulched vegetables over what would be necessary if the mulch could be applied earlier. But, if the impracticability of early mulching is a serious drawback to the use of mulches, so is the impracticability of mid-summer cultivation under farm conditions a serious objection to dependence upon cultivation alone. For most vegetables, mulching should be used to supplement cultivation rather than displace it. Such cultivation as is commonly given farm gardens is better for most vegetables in early spring than mulching, but mulching is just as surely better in midsummer than the neglect which is the common thing in farm gardens at that time of year. The Experimental Station tests have indeed shown mulching to be better in many cases than the most thorough cultivation throughout the summer.

Not only are many vegetables grown with less labor by mulching than by cultivation, but the yield and quality of the product is often improved. In several cases yields have been decreased by mulching. In some of these cases, however, the injury was due not so much to the use of a mulch as to its being applied too early.

A Boston entomologist makes the statement that bugs, under which name he includes all insects from the grasshopper to the ladybug, are destroying property in this country to the amount of $250,000,000 a year. This corroborates the investigations of the Agricultural Department, who find that twelve insects, principal among which are the chinchbug and potato beetle, destroy annually not less than $100,000,000. Truly the insect, small as he is, is more dangerous to the human race than war.

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"We have some fine jackplanes, ma'am, that I think would do it."

"Mercy, isn't this a drug store?"

"The drugs are over there by the soda water fountain. This is the hardware counter, ma'am."—Cleveland Plain Dealer.

EVERYTHING FOR THE LAWN.

The Peter Henderson Co., 35 Cortlandt street, New York, issues an instructive catalogue, "Seeds and Appliances for Lawn Making." At the beginning are a couple of pages of general information regarding the formation and care of lawns. It is an interesting booklet and worth having.

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Agriculture As a Profession—Dr. George E. Vincent, professor of sociology in the University of Chicago, who enjoys a national reputation, gave an address to the students of the University of Utah last week, in which he took occasion to commend the profession of farming as one of the most progressive and dignified in the catalogue of modern scientific development. In the course of his address the Desert Farmer says he stated "that agriculture, instead of being a matter of disdain is to be made a profession, for which a man will have to be as carefully trained as is the lawyer or mining engineer of today." To some people such a radical change seems impossible, but when they consider what has been done by putting technical skill into other lines it is made more clear.

Continuing, Dr. Vincent said: "A good example of what the professionalizing of an occupation can do toward building up an honorable social type is seen in the contrast between the social position of the trained nurse and the domestic servant. The trained nurse's work is is many respects more menial than that of the servant girl, but science has made her trade skilled and highly technical.

"This will be the effect upon the business of farming. Whenever the farmer makes his calling highly technical and it becomes a profession, requiring only highly trained men to succeed, then the long standing prejudice against farming and in favor of a business training will be smoothed away.

"Agricultural experimental stations must be established in many places throughout the country and the public school system must be brought in harmony with the university training. This is to be done by establishing model farms in or near all the schools so that the children may study agriculture from a more practical standpoint."

This point well deserves the careful consideration of the public, for it has come to be acknowledged as a living fact that the theoretical elements of education should be combined with practical operation. It is this fact which the public recognizes and it is for this that our universities and schools of higher grade are seeking to establish small model farms, or plots of ground where students may put in practice out-of-door what they are taught in the class-room. The time will come when this idea will obtain even in Union High schools, because of its practical demonstration of book education taught in the classes. We look before long, to see prominent educators of the country endorse this plan. It is the first of the many great steps that all our advanced schools in the land must take to carry out the necessary evolution in educational systems.

* * *

The University Farm—On the 5th of this month the commission appointed to select a site for the University farm, decided to locate the farm at Davisville in Yolo county. The Cultivator is not familiar with this particular point nor with the advantages it offers, but Prof. E. J. Wickson, expert of the University Farm commission is, and in an interview on the subject he makes the following statement.

"The selection of the Davisville site for the University farm is eminently wise. At the close of my first examination of the farms offered, I considered it as the most available because of convenience of access, means of frequent communication, prominence through proximity to main overland and local railway lines and because it so fully answered the requirements and because it is so thoroughy representative of wide interior valley conditions. There can be no question that the law passed by the last legislature contemplates just such a situation and in their action the commission has directly carried out the law.

"In my report to the commision I took into account some other considerations which led me to commend other sites as alternative with that at Davisville. One of the other Yolo county site near Woodland seemed to me to stand first because so many excellent buildings would be acquired with the land and the utilization of them would save time and money in opening instructional work on the land. Another site which was commended, chiefly because of proximity to the university, was the tract near Walnut creek, but it was for the commission to decide just what weight should be attached to proximity. It is possible that the confusion of interests in Contra Costa county may have obscured the claims of that site.

"The fact remains, however, that Davisville is chosen as the most available from all points of view and most thoroughly representative of irrigated interior valley conditions which the law contemplated. It is fortunate that a decision has been reached and that the university can proceed with the equipment and utilization of this the most important single contribution which the state has ever made to the development of agricultural education. It is fortunate, also, that the commission has answered what seemed the clear, popular demand that the location be representative of the greatest open area of the state, rather than convenient for the university. Convenience to the university is in fact a matter which should not be too narrowly considered. The university is, and should be, at home everywhere in the State. A grand institution which is studying stars from the top of Mount Hamilton, studying marine line at Pacific Grove and San Diego bay, studying trees at Chico and Santa Monica, studying plant diseases in the Sacramento valley and at Whittier, studying fertilizers by use of land at half a dozen widely separated places in Southern California, studying plants and the use of them everywhere that the university investigators can find places to grow them, killing insects at Visalia, San Jose, Concord and Watsonville, and studying the growth of grapes and the making of wine in San Joaquin and Fresno counties—surely an institution thus localized and distributed in its work can find a home for one of its activities in such a central and accessible district as southern Yolo county."

The University of California should not be centralized. It should do everything it can for the people in the place where it can be best done and such a course will make it solid with the people. The commission has reached a decision for which every one should be thankful.

* * *

Good Fair Promised—Now we get the information that the directors of the State fair are going to give the people of California a genuine, allaround fair, in which all sections of the state are to be recognized.

A correspondent from Sacramento, writing the Cultivator on the subject, says: "The reference made to the State fair commission in the Cultivator recently was timely, the criticism just, from the standpoint of past experience, but we are glad to say no occasion will be required for a repetition of the same because the directors have decided to give the people a cosmopolitan fair this year."

This is refreshing, certainly, and we shall hope and trust the prediction made by our correspondent will be verified, and that we are really going to have a State fair this fall which will represent not only the peculiar district in which Sacramento lies, but the whole of the State.

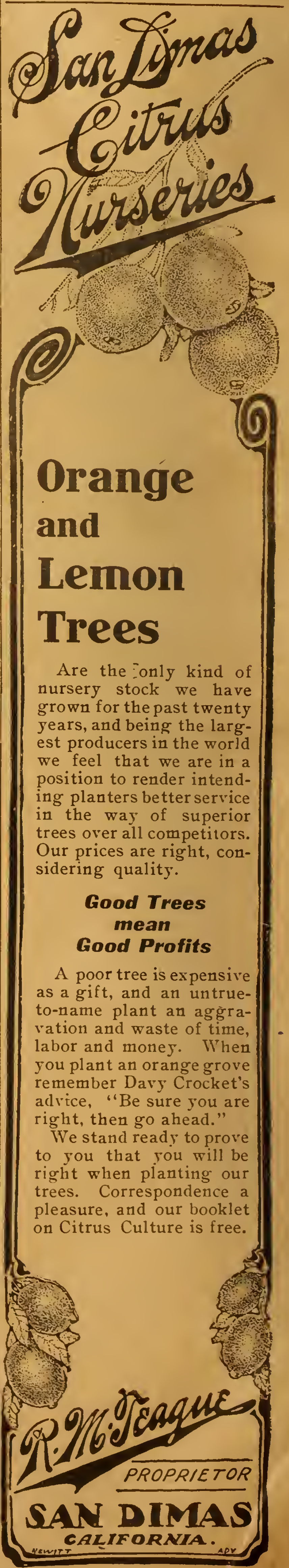
Hitherto California as a whole has not enjoyed a distinctive showing at any of these exhibitions. Its representation has come at other fairs, for we have had no inning at the State fairs.

Nor have these fairs been really fairs at all: simply a large horse-race with a few pumpkins and pigs and gentemen cows attached for the benefit of the farmers, but of no real value to the farmers as a class.

If the promoters will now go to work to interest the whole State, the agriculturalists, the stock raisers, in particular, we may see such a exhibition as California has never witnessed. Let it be so.

Farmers' Institutes.

Carpenteria, April 24-25.
Fillmore, April 25-26.
Monrovia, April 27.
Upland, April 30, May 1.
Corona, May 2-3.
Anaheim, May 4-5.
Escondido, May 7-8.
El Cajon, May 7-8.
Chula Vista, May 11-12.



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R. M. Teague
PROPRIETOR
SAN DIMAS
CALIFORNIA.

Hewitt Adv

NEWS OF COUNTRY LIFE IN THE GOLDEN WEST

HORTICULTURE.

Last week with the exception of a few cars, finished the navel orange crop in Highland.

A considerable acreage of orange orchards about Monrovia, particularly in the lowlands, has been changed from oranges to walnuts.

The Highland Orange Growers' Association finished their last car Wednesday last, and from now on will be busy with a few cars of sweets and Valencias only.—Messenger.

The board of supervisors in response to an appeal of the fruit growers of Pajaro valley, has granted an appropriation of $600 to continue the crusade against the codlin moth.

The condition of the fruit crop around Marysville is in doubt. Most of the orchardists report that almonds are all gone, apricots nearly so and peaches more than half destroyed.

A Fresno dispatch says: There is a prospect of a big shortage in the peach crop. In the San Joaquin valley the ravages of the blight are expected to reduce the yield one-third

Investigation among growers here today reveals the fact that some of the orchards that were sprayed with lime, sulphur and salt, and some with an oil emulsion, are badly affected this year.

Inquiry for orange groves around Monrovia has been heavier the past few weeks than for years, stimulated, it is believed, by the good prices obtained for the fruit in the Eastern market.

What at first seemed to be a very promising season now looks like one of poor crops, and the only consolation at hand is in the hope that the price will be greater on account of the shortage.

The Colton Fruit Exchange has just paid a dividend to its growers for all fruit received during the month of February. It amounts to 2 cents a pound for all navels received at the packing house.

The deciduous fruit growers of the Eastern states are threatened with a light crop this season. The warm weather in February started the buds and the stretch of March winter froze them off.

A hundred cars of oranges blocked by the slide on the S. P. between the Tehachapi and Bakersfield had to be shipped back to Los Angeles last week, re-iced, and sent north again over the Coast line.

This has been an unusually big year in the olive business in the San Diego section. For several weeks J. C. Kubias, who has handled most of the olives grown there, has been sending away from two to three cars a week.

The condition of the peach orchards here in general, has become a matter of concern, says the Hanford Sentinel. Last year the disease attacked the peach trees in the Suisun country, and the orchards are not as bad off this season as they were last.

It is believed by many that the present year will be the greatest in the history of California for the citrus industry. It is confidently believed that growers will bank from $18,000,000 to $20,000,000 after all expenses of freight and icing charges are paid.

In no section of the county will there be a full apricot crop, and in most sections there will be no crop whatever worth considering. Like last year the crop is badly spotted, only more so.—Ventura Free Press.

The price will probably be higher as the supply is reduced.

The Hanford Sentinel says: The Kings county raisin growers have united with the Fresno growers to investigate the association books. There are between thirty and forty growers in Kings county, and perhaps 300 or more in Fresno county, who have pooled their interest in the investigation matter.

The Riverside Press says: The navels are pretty well cleaned up at Redlands also; those who have any quantity of this variety left are certainly in clover the way prices are running at present. Riverside has 700 cars or more to ship and they are worth from $500 to $600 per car net to the grower, or $350,000 to $400,000.

At a meeting of Dinuba raisin growers, held last week, a pool of one thousand tons of fruit was sold under three-year contract at 3¼ cents to packers. This is the first contract, it is claimed, for a large amount made by packers for over a year and indicates the activity that characterizes the market and the prospects for still higher figures.

Prof. Albert Herre, head of the biological department of the San Jose High school, has recently been honored by the publication of a work of his on the lichens of the Santa Cruz peninsula by the Washington Academy of Sciences. Of the estimated 300 varieties of lichens found in this section of California, he has investigated 250 varieties, and is now at work on the others.

AGRICULTURE.

Fullerton shipped last Thursday, a carload of cabbage, 137 crates, which netted the grower $30 per ton.

Our wheat farmers say that the stand of grain this year at this time is in better condition than during any years since 1884.—Lindsay Gazette.

Cabbage growers in Orange county are jubilant over the present outlook. The acreage this year is unusually large and the quality is all that can be desired.

The Lindsay Gazette says: Cantaloupe planting has commenced in the Lindsay district and the present prospects are that quite a large acreage will be put out.

The Walters flouring mill at Pendleton is spending $17,000 to increase the capacity of its plant from 100 to 500 barrels per day. The wheat crop promises to sustain the venture.

Hop growers in this part of the state are agitating a movement to reduce the acreage of hops, believing by this means better prices for the product will prevail. Over-production was responsible for the low prices that prevailed for two years.—Pajaronian.

Farmers around Corcoran, Kings county, are rejoiced at the copious rainfall that has visited that section this spring. It is the general opinion that the crops will be a record-breaker for that entire district as the ground has been put in fine condition and will require little irrigation.

LIVE STOCK.

Asher & Falkenstein of Anaheim shipped last week 1,200 dozen eggs to Los Angeles. The market price here is now down to 18 and 19 cents a dozen.

The New Era of Corning reported last week the shipment from that station of 8,000 pounds, or four tons of dressed turkeys, 40 dozen chickens, and 1,350 dozen eggs.

Oregon's wool crop this year will aggregate about 17,000,000 pounds, a slight gain over 1905, according to E. H. Clark, a woolgrower of Pendleton, in an interview in the Oregon Journal.

Two hundred Angora goats perished in the storm of March 27th, while being driven from Manton to Chico. There were 2,000 head in the band, and before shelter could be reached they became chilled in the snow and sleet. The animals have a value of approximately $4 per head.

The supreme court has just made a decision that butter may be sold without marking weight on the label. The court holds that the law is unconstitutional on the ground that it is an unwarranted restriction on the citizen's constitutional right to his property.

A three-legged colt was born at Gonzales, in Monterey county, this month. The left front leg is absent and there is a small lump of skin extending from the shoulder about two inches in length. The colt is strong and manages to hop about on its three legs with apparent ease. It can lie down and get up alone and is a rare curiosity.

The most serious pest in California is the potato worm. The damage to the potato crop in Colifornia, as estimated on a basis of opinions obtained from a large number of growers and dealers, aggregates in some years fully 25 per cent. In one section where some of the finest potatoes are grown, the Salinas valley, the dealers estimate that at times the loss has gone as high as 40,000 sacks in a single year.

Robert E. Foster, Jr., of Newton, Sussex county, N. J., an ornithologist and biologist, has succeeded, with the assitance of his white Leghorn roosters and hens, in developing an egg with a handle. On the small end of the egg is a protuberance from the shell about as big as the handle of a tiny demi-tasse. The butt of the egg is flattened, so that the egg stands by itself. Mr. Foster is reaching for a higher triumph. He is adding, gradually, whisky, sugar and nutmeg to the water his Leghorns drink. He expects soon to ship eggnogs by the crate.

MISCELLANEOUS.

Visalia now has a popualtion of over 4,000.

Plans for a pickle factory are under way at Santa Ana.

There is a land boom northeast of Lindsay, Tulare county.

Pomona has inaugurated a movement for a municipal water plant.

Vacaville has authorized the issuance of bonds to the amount of $25,000 for a sewer system.

The sheepmen of Tehama County have organized an association to fix prices on wool and cut out the middle men.

The Porterville Messenger states that Tulare Lake can now be seen from the hills back of that town when the day is clear.

Frank E. Shaw and associates are about to bore for oil and gas east of Long Beach. They will go to a depth of 1500 feet if necessary.

The Imperial Creamery received Sunday an extra order for 5000 pounds of butter from the Cananea Mining Company of Cananea, Mexico.

While hiving some bees near Tulare, S. F. Hoover was so badly stung that he became unconscious and for a time his life was despaired of.

LINER ADVERTISING

Advertisements in Liner Column will be charged 1¼ cents per word. No advertisement taken for less than 25 cents. Eight words to a line.

LINERS

ANCONA EGGS (FROM PERPETUAL EGG Machines), imported and domestic matings, $2, $3.50 and $5.00. L. L. Viereck, Pres. Ancona Club, Albany, Oregon.

FOR SALE CHEAP, 25 H. P. HOADLEY Portable Steam Engine. New boiler rigged for oil. Everything in first class condition. Enterprise Mfg. Co. San Jose, Cal.

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FRUIT CANNING MACHINERY FOR the Ranch or Factory, 6 sizes, $10 to $125. All appliances, highest award by U. S. Trades Report. Address, W. H. Ritchie, Pacific Coast General Agent.

WANTED A POSITION AS FOREMAN BY a man of 12 yrs. practical experience who understands the cultivation of oranges, lemons grapefruit and walnuts, flowers and vegetables, gasoline engines and pumping plants in general Address X 1435 E 22nd St. Los Angeles Cal.

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Edison Phonographs and Records at factory prices, delivered free anywhere on receipt of full retail price; largest stock of Edison records west of Rockies; send for circulars. Peter Bacigalupi, 786 Mission St. San Francisco

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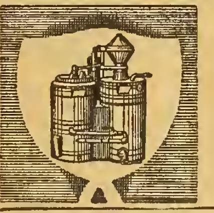

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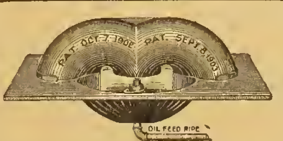

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Live Stock and the Dairy

BY MRS. MINNA E. SHERMAN, FRESNO, CAL.

INSTITUTE NOTES.

At El Cajon, two new silos had been built and filled for the first time. In one case the silage had been made very wet and was not so perfect as in the other case, where it had not received additional water. While I have always used water freely, yet I have always considered that the ripeness of the corn would have considerable influence on the amount that was proper. In Fresno the atmosphere is very dry and at the time of filling the silos, corn cut even an hour, has lost water by evaporation. Now in damper places, or with less perfectly ripened corn, much less water would answer. So the silo builder will have to use his judgment about this matter. I think that in a great state like California we can hardly expect one way to be the best. East locality must find for themselves which is best. Now in the above cases it was probably the condition of ripeness. The greener corn probably had enough water already in it, while the drier corn needed it to help exclude the air. The water is in a measure a mechanical help in this way. The change of the cut corn into silage is said by some to be chemical; by others to be caused by an amide a bacterium, that starts fermentation, and is then destroyed by the heat. Now, if there is abundance of water it is absorbed by the corn, heating and cooking it, sending steam through the mass to raise the temperature uniformly. All the oxygen not burned up as heat is pushed upward by the slowly settling down of the heavy carbonic acid gas, and the corroding, oxidizing or burning action of the air is checked.

Another question was asked: Why did the silage shrink from the sides and admit air to spoil the silage? Now I had never had this trouble and could only repeat that we keep the edges higher during the filling and tramp it well; also that when the filling is completed we level off all over the top and tramp it well, center and sides. Now if it is desired to hold the silage for several months, straw or foxtail and alfalfa hay is used for a cover four inches deep over the top. This is also well wet down. It at once starts to grow and the plants sending down roots makes an airtight mass quickly that the air never penetrates.

* * *

Three cases of abscess of the throat and jaws were also discussed. As in none of the cases the swelling was attached to the bone, they can only be considered as a local trouble and not lumpy jaw. The best thing is to cut them so as to give free drainage, avoiding anything like a sac to hold pus; then keep the opening clean. Usually the trouble is found either to be a foxtail or barley beard and the abscess is caused by the beard working out. This makes the trouble.

* * *

The lack of care of milk in the house often makes it impossible for a dairyman to give his customers satisfaction. The following story is told by one of the university professors: He had been selling a little milk to a neighbor. This went on satisfactorily for some time, when the complaint came that the milk soured too quickly. The cow owner cleaned up carefully, sterilized all the milk containers and then found he had consumed so much time that delivery time was later than usual; so he took the milk over to the neighbor personally. Knocking at the kitchen door the maid opened it and the professor said: "Here is the milk." A pitcher was hastily emptied and dashel into a dishpan half filled with soiled water, given "a shape, a rinse and then a swipe;" with a half wet dish towel that still left the inside moist, and handed the astonished man as a fit container of his carefully handled milk. This happens every day, for I find that fully half the people take a bowl used in cooking and empty the bottled milk into it, and then let it stand until convenient to put into the refrigerator. The refrigerator in the average house is simply a receptacle for everything in the way of table scraps, and there they remain until convenient for the cook to either use or throw them out.

* * *

The old question of salting cattle comes up constantly. Now salt is cheap and a lump of salt should be placed within the cow's reach. It is better to provide it and not have it used than to have animals go without if they desire it. Cows, like "Mrs. Basley's hens, must be comfortable to do well.

* * *

The mother's ask why they have little brushes of fever in their bottle-fed babies. They are careful to pasteurize the milk just as the doctor orders. Now this trouble comes largely from destroying by heat of the natural lactic acid in the milk, and the simplest remedy is to give baby a small quantity of orange juice, beginning with a few drops in a teaspoonful of warm water and increasing the quantity as the child craves it. The natural orange juice or scraped apples is better than citric acid from the drug store, in that it is in a form that diffuses itself over the stomach rather than falls in one place or spot on the tender lining.

* * *

The single best feature of this series of institutes seems to me to be the emphisis placed upon the deep rooting of trees and doing so by placing the food deep in the soil. I have for a number of years wondered how the average farmer of Southern California could do his work with the small horses he possesses. The need of 1400 to 1600-pound work horses is great. Horses of this size will stand up under their work and come out at the end of the season in fair condition. The horse rasonably fat does not gall on the shoulders like one reduced to a skeleton. I found at Covina a span of Percheon grades I sold a month ago. Now this pair weighed about 1640 each and were raised on the ranch. The man who purchased them saw them being shod and purchased them and two others for $1000. That was a good bargain for him and good gain for us, as these horses grew up on the ranch while their dams worked and they were sold from the plows without any fancy training or fitting for market. The farmers are evidently coimng to see the value of animals that will pull at the plow as three or four of the smaller ones and eat no more, wear out less shoes and harness and come out of the plowing ready to work on the road. I have owned many spans of horses that never had a day off work when there was work to be done. From the time they were broken until they pass away horses whose health is good and who never work harder than their strength last a long time. Why? Because they are over the average in strength for the ordinary plows and wagons there is always reserved strength to be called on. So the animal is never strained. Why this is not considered in horses I no not understand, for no one ever lays in machinery or boiler of exactly the same horse-power as the engine. The six or eight horse-power boiler is used to run the four horse-power engine—to have reserved force for extra needs. The man of reserved force is the man that can rise to an emergency, and the tree that has deep roots has also force to meet the requirements of extra droughts or undue heat of the summer. So let the horses be considered and not worked every day to their maximum strength. By having them above the actual daily demand there will be strength for years of usefulness.

If the consumption of mutton increases as it has in the past ten years or even five years there will be no danger of getting an oversupply

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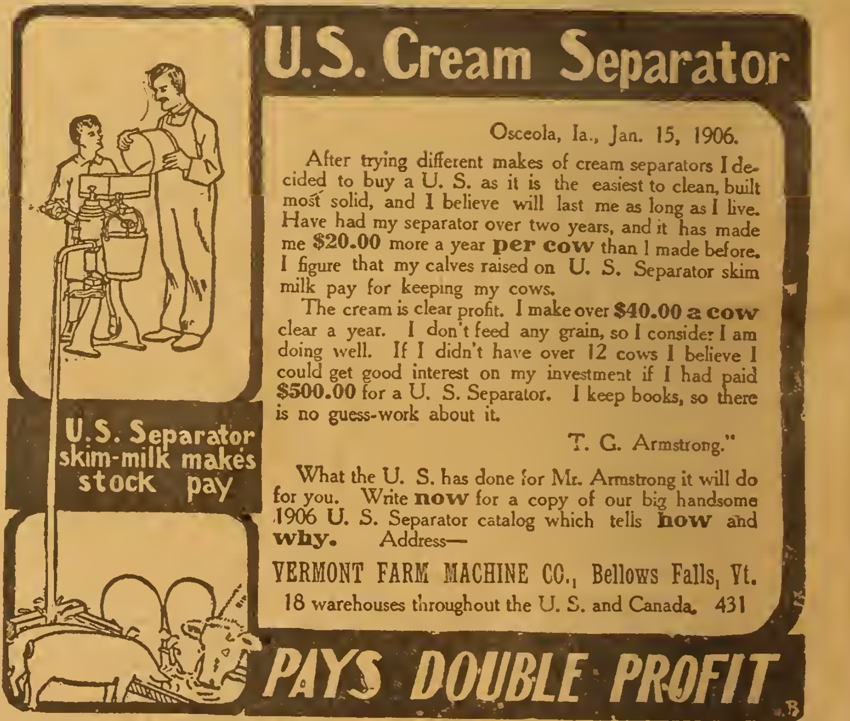
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T. G. Armstrong."

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DR. VON BEHRING'S BOVOVACCINE AS AN IMMUNING VIRUS.*

*The spread of tuberculosis among cattle in this country and the consequent loss it entails, as well as the danger mankind meets from diseased milk, leads The Cultivator to publish the following remedy which is attracting general comment.

"If a man can be immuned against smallpox by inoculation with living cowpox bacilli; if cattle can be immuned from anthrax with similar methods, even if anti-toxines, the product of pathogenic bacteria, do mitigate the ravage of a communicable disease, and also if a toxine is serviceable as diagnosing infectious and communicable disease in cattle, surely we must feel that this theory has a strong foundation to rest upon. It is the function of the medical art to not only cure disease, but to take such means as will alike prevent its propagation. Tuberculin can serve but one purpose. It will unquestionably tell us of the existence of tuberculosis, but it in no way points to its extermination. The idea that all cattle reacting from tuberculin should be slaughtered is not sound in theory or practice, but up to the present time this idea is largely in vogue. I believe we are now about to enter upon a larger conception of a large question. The step of positive diagnosis has been taken. To lessen the disease or extinguish it, is the next step. The latest investigation offers a virus as the means to be taken for this accomplishment. About 1891 Professor von Behring of the Marburg Institute, began an experiment with bovine and human tubercular virus. The extensive experiments carried on by Von Behring cover every phase of the work accomplished along this line, and show that the method insures results.

The inoculating virus which Professor von Behring has named "Bovovaccine" consists of living human tubercle bacilli, whose action has been accurately tested. The tubercle bacilli have dried without losing their vital powers in any way. These dry tubercle bacilli, kept in sealed glass tubes, will retain their action on cattle unchanged for a period of thirty days, after which time, although the immunizing power is not entirely lost, it has become so weak as to render it ineffective in the dosage recommended.

"For the injection the Bovovaccine is uniformly mixed with a freshly boiled and cooled 1 per cent. salt solution, which is done according to the following: The entire contents of a tube, 20 immunizing units, are placed in a mortar and crushed with the pestle; then 2 or 3 cc. salt solution is added, and the mixture rubbed until a uniform emulsion has been obtained. This emulsion is poured into a graduated cylinder holding 50 cc. The mixture in the cylinder is then made up to 30 cc. and poured into a wide-necked sterilized bottle holding 100 cc. The bottle then contains the inoculation substance ready for use, 2 cc. of which will be the dosage for the first inoculation of a calf. For the second inoculation the dose would therefore be contained in 10 cc. of the fluid, which is five times larger than the first dose. The ready emulsion should be used as soon as possible, at the latest within twenty-four hours after it has been made."

The injection of the virus is easily done. Clip the hair over the upper third of the left jugular vein, cleanse the parts with a 2 per cent. lysol solution, compress the vein with the thumb until a distinct enlargement appears, then insert the canula, and if the vein has been punctured, blood will flow freely from the canula; if no blood comes, partially withdraw the canula and reinsert in a direction slightly different from the first. Do not attempt to inject the virus until you are sure the vein has been properly punctured. This much done, unite the syringe with the canlua (which has been previously filled with the virus) and slowly inject its contents into the vein. Immediately after injection, the parts should again be cleansed with lysol solution. With this done, nothing further is necessary. The vaccination for tuberculosis, like that for anthrax, is done in two installments; the second injection follows three months later. The stability of the virus is such as to enable it to withstand much of adverse condition, without fear of deterioration.

The records of treatment by this method show that a large number of cattle have been inoculated in several states in Germany. This immunizing method has received the sanction of the agricultural law in Hessia, Oldenburg, Mecklenburg and the kingdom of Saxony. We will not attempt to present details of the result, but suffice it to state, that the result so far obtained has put the treatment within the sphere of what seems to be positive results.

This method is of immense value, and surpasses all others as to cheapness and easiness of application. It will supersede all previously proposed methods and render them absolutely superfluous."

"It is needless to mention that the successful suppression of cattle tuberculosis is of vast importance in the breeding of cattle. It would release agriculturists from a burden which has hitherto rested heavily upon them!" In the United States this loss amounts to millions of dollars yearly.

"We must also take into consideration and calculate the loss in the production of milk, arising from insufficient assimilation of food, and the lower percentage of nutrient substance contained in this milk, and last, but not least, the threatening danger of disease to humanity."—Reprinted from American Veterinary Review, by Claud D. Morris, V. S.

THE YOUNG BULL.

Editor Cultivator: Will you tell me through The Cultivator how to tame a young Jersey bull? He is 10 months old, is a splendid animal, but has developed a mean disposition. He hooks and stamps with his feet and last night knocked the hired man down.

Santa Barbara. B. E. P.

You ask a difficult question. Usually the Jersey bull is quite as tractable as any other until he reaches the age of three or four years, when he may develop traits of anger such as you say your bull has. The best thing to do with your bull is to let one man handle him. Break him to halter, if not already broken, ring his nose and have a cord strong enough to subdue him if the halter fails. Do not whip or beat him. That will only tend to make him still more vicious. Never fool with his head, speak kindly but firmly to him, tie his halter strap so he can not reach you with his head, and rub him with your hand, often, on the back and loins. Let him know you are his master. Keep that idea in his head all the time, for remember, a bull has a deal more sense than he is credited with possessing. Feed him, now and then, from the hand, salt, a split carrot, or an apple, and if he hooks at you, sharply push his head away. He will in time get over hooking, although the rule is always keep your eye on the best trained bull in the world.

Curry him every day with comb and brush, when he is tied, keep him away from the herd and feed him green feed with his rations. The rule is to handle a young bull gently. Don't show fear of him at any time, but always watch him. If at the end of a year you find you have made no progress in training him, and he shows growing meanness as he ages, you had better trim him and fatten him for the block.

Advertising Column for Members
OF THE
JERSEY BREEDERS ASSOCIATION
OF SOUTHERN CALIFORNIA

Organized for the general advancement of Jersey interests, to extend knowledge of their superior merits, for the mutual benefit of members, and to increase the profitableness of one of the State's greatest industries. Breeders are requested to unite with the Association.

FOR SALE

A registered bull calf, 6 months old and a beauty. Uniting the blood of the famous World Fair champion cows Ida Marigold and Brown Bessie combined with the Sweepstakes' Bull Pedro.

No finer combination in breeding can be fornd in the State. This individual is fit to breed the best herd. It won't cost you any thing to see him if you call at our office any afternoon.

Sterling Milk Co. 205 Tajo Bldg. Los Angeles, Cal.

BULL FOR SALE

Having sold my ranch I am forced to sell Golden of Biltmore. 60082, a grandson of Golden Lad's. Golden of Biltmore is one of the best, ***if not the best*** sire on the coast, several of his daughters less than two years old selling for over $200 each. Highest bidder for next sixty days takes him. If everything is not just as represented, I will give anyone the ***bull free of charge. I sell on merit.***

C. S. Burgess, Riverside, Cal.

Pure St. Lambert Bull
—ST. LAMBERT OF RAMONA, No. 62633,—
heads the Ramona Herd of Registered Jerseys of
Geo. W. Thomas, Riverside, Cal.

The Whiting Jersey Stock Farm Co.

Have moved their herd of Jerseys from San Bernardino, Cal., to the famous Imperial Valley, and hereafter their post office address will be Heber, San Diego Co., Cal., from which they will conduct all their business. Abundant green feed every day in the year will be of great advantage in the best development of our young stock.

Whiting Jersey Stock Farm Co., Heber, San Diego Co., Cal.

LEMONITA HERD

Leffingwell Rancho, Whittier, Cal.

Service bull "SARGENT FOX," 64833. Bred on the Island of Jersey. Sire, the great Flying Fox, that sold at auction for $7,500. Dam, Miss Sargent, reserve winner over Jersey; winner of seven first prizes and five championship cups. "One of the grandest cows the island has ever produced."

VENADERA HERD
. . OF REGISTERED JERSEYS

For Sale, yearling bull Ruth's Gordon King, No. 72360 A. J. C. C. He is of richest breeding on both sire and dam's sides. Also three richly bred heifer calves by Marigold's Exile King, from cows that are good yearly producers. For particulars write

GUY H. MILLER, RIVERSIDE, CAL.

Oakhurst Jerseys

Sons of imported Golden Marquis out of prize winning and tested dams, for sale.

L. Bradbury Duarte, Cal.

Kings Victor King of St. Lambert

At head of herd. Young stock for sale.

H. N. WILLIAMS COMPTON, CAL.

BERKSHIRE BOARS—ALL AGES
T. WAITE, PERKINS, CAL.

Thoroughbred Holsteins

Four thoroughbred bull Calves from (6) six weeks to (3) months old, De Kol Strain. For information see or write
J. M. Spencer, - - - Compton, Cal.

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Profit in the Poultry Yard

BY MRS. A. BASLEY, HOLLYWOOD, CAL.

QUESTIONS AT INSTITUTE.

The letters I receive, and the many questions asked me at the Farmers' Institute, often give me a topic for our weekly chat. This week's chat was suggested by two of the questions at Elsinore. The first was, "Can a person feed hens by the rule of thumb?" My reply "It depends upon who owns the thumb" brought an audible smile. It was not intended to be a funny reply, although I always feel that a smiling audience is an appreciative one. But I wished to imply that feeding chickens by the "rule of thumb" which I suppose means without any plan or method is like cooking or making cake without measuring or without recipe.

We all know there are some women who are good cooks and say they never measure, they can guess at the right amount of the various ingredients, have good luck, and turn out a good cake. They are lucky! I am one that likes to measure the ingredients for my cake and take no risks, and so with chickens and hens, I like to go by rule, if I have a good rule or good recipe.

* * *

I am one of the lucky ones, however, for before I knew the why and the wherefore of feeding I was lucky enough to be feeding just about right, and so even by the "rule of thumb" my chicks flourished and grew, just grew without my understanding why. All the time, however, I was quietly experimenting and gaining experience. Just thirty years ago this month I was raising fine Houdans, I had them under hens and I fed differently, one brood had hard-boiled eggs chopped with onion tops and bread crumbs twice a day, the others wheat, rice, bread and milk, all were on a grass lawn. When they were three weeks old the chicks fed on hard boiled egg weighed a third more than the others, at least it took three of the others to balance the scales against two of the egg-fed youngsters. Do you wonder that I smile when I see articles in some of the poultry papers denouncing hard boiled eggs as exceedingly injurious to chicks? I was feeding the mothers of those chicks wheat and whole corn and by the time the chicks were two weeks old they began to eat the wheat also.

The hens were confined in coops on the back lawn, the chicks (70 in all) ran around them, when the weather was wet coops and all were moved into the wagon-shed. Every one of the seventy lived to maturity.

* * *

The second question propounded to me was, "What is the cheapest way of feeding fowls?" This was quite a tough nut to break! The cheapest way must be the best way, and the best way undoubtedly, judging by the results, must be the cheapest.

Food has its influence on health. In different localities some foods are cheaper than others, and to feed cheaply as well as successfully these foods must be mixed in proper ratio to give us the desired ration. The amount of food, the variety, and method of feeding, depends largely upon what your fowls have been accustomed to. Damaged food is money wasted, the best of food is none too good.

The needs of a fowl differ, but one thing I notice here in California is that the cheapest food we have is the very food that people forget to give their fowls.

The green food—Of the green foods alfalfa is the best; next to that lawn clippings of clover. Many a time have I driven ten or twelve miles to get clover lawn clippings from a friend's lawn. These would usually keep fresh on the north side of the barn for two days. Some of them I would dry on a cleanly swept yard in the sun, then sack them for future use. I freshened them by pouring either scalding or cold water over them and allowing them to stand a few hours. The fowls ate them with avidity. The lawn clippings cost me nothing and were one of my most valuable foods.

Alfalfa and clover contain more protein than any grasses; in fact, they have all the elements of the egg in them. Beets, carrots, turnips, pumpkins, cabbage, lettuce and any green vegetable that we would eat ourselves are good for fowls. Added to these I am now feeding what is called "Calfalfa." It is alfalfa dried and ground. At first the hens did not like it so I began with only one tablespoon of it for the whole flock (about two dozen fowls), the next day I gave only two tablespoonfuls, and gradually increased one spoonful at a time till now they eat it freely. In the same way, I commenced gradually with the ducks. It was inconvenient to feed the ducks any other green food during my absence from home, but they liked the "Calfalfa" and whilst they had it their eggs had a rich, deep-colored yolk. We know alfalfa colors cows' butter, and it has the same effect on the yolks of the eggs, making them a rich orange color.

Green food is the cheapest food, and is absolutely necessary if you wish the best results.

Now as to cheap other food, the most expensive part of the ration is the nitrogenous part, or the protein. Protein is found in most of our grains, but not in the proper proportion for making the

Prussian Lice Killer
Easy, quick and certain riddance of vermin on poultry and animals.
"I have used the Prussian Lice Killer on my chickens and it is certainly the best I ever used. It is easily applied and it does its work in great shape. I will say to my fellow poultry keepers that they will save time and trouble by using Prussian Lice Killer.
Harry Rutledge, Dyer, Ind.
½ Gallon 50c. 1 Gallon $1.00.
Prussian Lice Powder
The dust method. Sure death to lice, no injury to birds or animals.
"I used a 25c package of the Prussian Lice Powder on 16 head of lousy cattle, and the day after could not find a louse. I consider it the best thing I ever saw." H. V. Spafford, Kelso, N.D.
In 25c and 50c Packages.
Prussian Poultry Food
Guaranteed to produce healthy fowls, more rapid growth, make better layers and to ward off and cure Roup, Gapes, Cholera, etc.
"We have used Prussian Poultry Food for more than two years with great success. We find that it is the proper food for young chicks and just the thing to keep up laying hens."
Arnold Jungman, Poultry Yds, Gladstone, Minn.
In 25c and 50c Pkgs. 25 lb. Pail, $3.50.
"Poultry Profits," 36 pages, to poultrymen free, if you write us what stock you own.
Prussian Remedy Co., St. Paul, Minn.
AGENTS: Vaughan Seed Store, Chicago, Ill. J. W. Wilder & Co., Cincinnati, O. Lee-Pioneer Seed Co., Denver, Colo. Portland Seed Co., Portland, Ore.

White Wyandottes.
High scoring stay white birds. 1st Cock L. A. 1906 show and other winners. Eggs $1.50 to $3. per 13. $10.00 per 100. Mount Holly Poultry Yards, Hollywood, Cal. E. W. Preston, Prop., Sunset, Hollywood, 901.

Buff Wyandottes
Eggs from pens mated with 2nd prize Cockerel or 2nd prize Pen L. A. Show, $2.50 per 15. Stock and yards at San Gabriel. **Wm. J. Bodger, 251 S. Main St., Los Angeles, Cal.**

Blue Andalusians
From prize winning and egg producing strains. Eggs, $1.50 and $2.00 per 15; incubator lots, $6.50 per hundred.
C. E. Chittick, 124 Avenue 34, Los Angeles, Cal.

Beaumont W. Wyandotte and I. R. Duck Farm.
Eggs for hatching in Incubator lots. A few Wyandottes of Dustin strain to sell to make room. Prices on application. Mrs. C. A. McDonald, Beaumont.

Buff Plymouth Rocks
A few fine cockerels $2.00 to $4.00 each. Eggs, $2.00 for 15. Very choice Eastern stock.
F. W. Tutin, Riverside, Cal.

Brown and White Leghorns
Prize winners at L. A. Show, '06. Eggs from good laying strains. Eggs, special matings, per 15, $2.00. Incubator lots, $6.00 per 100.
Hemet Poultry Yards, Hemet, Cal.

THOROUGHBRED YOUNG CHICKS
White Leghorns, 10c.
White Ply. Rocks, 12½c.
Wm. A. GREEN, Box 401, ANAHEIM, CAL.

Blue Andalusians
At Los Angeles, 1906, our strain in a class of 68 Audalusians with 16 birds won more firsts than all our competitors combined. Eggs, $2.50 and $3.00 per 14.
Blue Ridge Poultry Yards, 128 Avenue 32 Los Angeles

White Minorca and Buff Orpinton Eggs
$1 per 13. $1.75 per 26.
Indian Runner Duck Eggs, 65c per 12, $4 per 100. All healthy and standard bred stock.
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For Sale, $1 per 15, also two fine White Rock Cockerels at $2 each.
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Prize-Winning, Egg-Laying, Wealth-Producing Strain.
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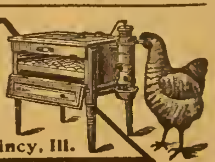

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Eggs from World's Fair Buff Leghorns $3 per 13, $7.50 per 100, $5 per 50. Commissioners' Cup for best display California bred poultry at Lewis and Clark Exposition. ***Barred Rock*** eggs, $1.50 per 13. ***LINDGREN BROS., Kingsburg, Cal.***

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Eggs for hatching from fine, healthy, thorough-bred stock. Egg, 75c per 13. **M. T. Taylor, 256 N. Eastlake Ave., Los Angeles, Cal.**

BRONZE TURKEYS
Hart's strain. Winners of five firsts at Los Angeles Show, '06, and always winners wherever exhibited. Write for prices.
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WHITE AND BUFF Leghorns
Old and young stock for sale. Eggs after January 1. Write for prices.
J. F. Sarmento, R.F.D. Box 4, San Leandro, Cal.

White Wyandottes and S. C. White Leghorns
Good layers. Trap nests used. Eggs: Wyandottes $1.50 to 2.50 per 15. Leghorns $1.50 per 15.
J. F. GOETTING, EL CASCO, CAL.

SINGLE COMB WHITE LEGHORNS
Thorough-bred Stock. Eggs, $1.50 per 15
INDIAN RUNNER DUCKS
Eggs, 1.50 per 12.
Send for illustrated catalogue
John P. Boden 638 Second Street, Watsonville, Cal.

Single Comb White Leghorns
Winners of the Dodge Sweeney Cup
Best display White Leghorn in Sonoma County at San Francico Exposition, 1905.
1st pen, $5.00 per setting; 2nd pen, $3.00 per setting. Eggs from free Range 5 cents above Chronicle quotations. Stock for sale.
A. H. M Davies, Western Ave. Petaluma, Cal

Buff Orpingtons and Barred Rocks
Standard Bred Eggs, $2 per 14. 3 sets, $5. Low prices on breeding stock.
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14 Ribbons at The Last Los Angeles Show.
Indian Runner Ducks' Eggs:—$1.00 per 13, $3.00 per 50, $5.00 per 100. White Minorca and White Wyandotte eggs:—$1.50 per 15, $4.00 per 50, $8.00 per 100. Eggs carefully packed and shipped any where.

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK
BUYS THE WORLD'S FAMOUS EGG FOOD NO. 4
MIDLAND
IF YOU WANT EGGS YOU WILL FEED NO OTHER
Used by all the largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

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The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the **GOLD MEDAL** at the St. Louis World's Fair for greatest hatch, with 40 different makes of incubators in competition. How's that?
St. Louis, Mo., Dec. 8th, 1604.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A Filcher, Commissioner.
And Now Comes New Reward for Merit:
Read the following telegram received from the Lewis & Clark Exposition at Portland:
"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."
WRITE FOR CATALOGUE 47—A BEAUTY
PETALUMA INCUBATOR CO.
Main Office and Factory, Petaluma, Cal., Box F. Los Angeles, 505 South Main Street
San Francisco Office and Salesroom, 33 Market St.

eggs, animal food of some kind has to be added. How to add the animal food to the best advantage is the problem which each of us must solve for herself. I can merely make suggestions or tell what I do myself.

First of all, I give the hens all the skim milk that they will drink and whatever is left I make into cottage cheese (curd); the chicks, turkeys and hens eat this ravenously. This saves their meat bill. Secondly, I keep before them in a hopper, or tin pail the dried beef scraps and allow them to eat what they want—of course, if the other hopper of grain and calfalfa runs out, the hens will be forced to eat the meat scrap and that will affect their bowels, and if kept up too long might make them sick.

"The hoppers need filling," said I, on coming home.

"No, ma'am! they are brimful."

"Well, they were not full yesterday!"

"Who told you, mother?"

"The hens," said I.

"The dickens they did! But really, was it only a guess, or what made you think it?" I had noticed the droppings, but the boys still think the hens and I have a secret language.

In utilizing the cheap grains or foods, or the waste of the farm such as cheap or waste beans, pease, small potatoes and other vegetables by boiling these and mixing in bran a good supper can be made for fowls several times a week. Kitchen leavings and scraps scalded and mixed with bran are relished by fowls, and little savings like this will cheapen their keep.

EDITOR'S QUESTION BOX.

Little Chicks. (Subscriber, Norwalk.) I am always interested in what you write in the Cultivator and think you may be able to tell me what the trouble is with my little chicks. They hatch out strong and healthy. I use hens to hatch them and they do fine until they are about three weeks old; they begin to look sick, stand around and chirp. They get poor, their feathers all stand out; they don't seem to have any bowel trouble at first, but after a few days some of them have diarrhoea and they dwindle and die.

Answer. I would have replied personally, but have been absent at Farmers' Institutes. There is something wrong in your management of the chicks, but it is difficult for me to guess where the trouble is. I think it is in the feed. Try as much as possible to imitate nature in this; do not give them any mashes or cooked food, but get them on to hard grains, chick feed, green lettuce, and something to take nature's food of worms and bugs. I find hard boiled eggs excellent for this; about one egg for two dozen baby chicks; also onions chopped one with each egg. Clean water they must have and freedom from lice or vermin.

I think if you had kept your chicks dry and moderately warm, clean, and fed them chick feed three times a day with lettuce as a lunch in between and at supper time give them either chopped egg and onion mixed with bread crumbs (dry), or rolled oats, you would raise every one. I know I do. I also give mine clean water and skim milk.

* * *

Blood Meal. (J. B. G., Berros, Cal.) Please inform me through the Cultivator how to make blood meal out of fresh blood. I can get blood once a week for hens, and wish for a method of keeping it; also best way to feed it. Please give me name of ingredients

White Plymouth Rocks
First class stock. Eggs, $1.00 per 13, $2.00 per 30. Indian Runner Ducks—$1.00 per 15, $2.00 per 33. A few ducks for sale. **H. S. Thompson, 125 W. Avenue 54, Los Angeles, Cal.**

BARRED ROCKS
EXCLUSIVELY
Send for 16-page 1905 Catalogue
H. R. CAMPBELL
Box O PETALUMA, CAL.

WHITE MINORCA EGGS
Best of Stock. Great Layers.
$1.50 setting, $8 100, $65 1000.
S. W. MORGAN,
Sunnyside, San Diego Co., Cal.

S. C. WHITE LEGHORNS
I can furnish you with first-class eggs that will hatch strong, vigorous chicks, and give you satisfaction. $2.00 per 15, or $7.00 per hundred. Stock for sale. All eggs and stock purchased of me shall give perfect satisfaction. I make this a point.
Monte Vista Poultry Farm
L. D. Pettit, Mgr. *Corning, Cal.*

Banning Poultry Yards
Wanted—To Exchange, 20 Barred Rock hens and 2 Barred Rock cockerels for same No. S. C. Wh. Leghorn hens and cockerels. Correspondence solicited. **Morris Bros., Banning, Cal.**

Mountain View Poultry Ranch
S. C. White Leghorns—Heavy layers. Eggs, $1.50 per 15, $5.00 per 100.
Indian Runner Ducks—Males for sale. Eggs, $1.00 per 13, $3.00 per 50, $5.00 per 100.
Mrs. J. L. Updyke - Fullerton, Cal.
Successor to Jacob Kreger

Little Chicks Just from the incubator of the following varieties and prices:
White and Silver-Laced Wyandottes
$12.00 per 100
White and Barred Plymouth Rocks
$10.00 per 100
Black Minorcas $8 00 per 100 | White Leghorns $7 00 per 100
These are all from first class stock—none better at the above price. We guarantee safe delivery anywhere we can reach within 72 hours of San Jose.
J. S. SMITH,
Box 526 SAN JOSE, CAL.
Hatchery—450 W. Santa Clara St.

SHADE'S Rhode Island . . . Red Farm
Automatic Chicken Feeders.
Shade's Egg Food sold to consumers only.
San Bernardino, - - California.

Rose Comb White Leghorns
High Grade Buff Orpingtons
Varian's Poultry Yards
P. O. Box 666. Home Telephone 1886
895 N. Catalina Ave., PASADENA, CAL.

High Grade S. C. Rhode Island Reds White Plymouth Rocks and Buff Leghorns
All new matings this season. Some of the breeding birds personally selected by the owner in the east last fall. Strong hardy stock, bred to lay and to win. Our Reds won at San Francisco, San Diego and Los Angeles shows. Best eggs $2 00 for 15, $5.00 for 50. From good utility matings $1.00 for 15, $3.00 for 50.
Lake Avenue Poultry Yards
757 N. Lake Avenue - Pasadena, Cal.

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FEED THIS MUCH
AT OUR RISK

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Prove Purina Feeds
On Our
New Selling Plan
which our ample capital, immense mills, and the quality of our feeds make possible.

Purina Feeds are sold through dealers in 100-lb. bags. But to enable you to test them at our risk, we have gotten up a Special 40-lb. bag, with a "Money Back Line" one-quarter of the way down. We will send you four of these 40-lb. bags for $4.00 direct from the Acme Mills. Make your selection from this list.

PURINA CHICK FEED
PURINA SCRATCH FEED
PURINA MASH (to make hens lay)
ACALFA MEAL

Pick out your own assortment—not more than two bags of any one kind.

When the bags come, feed to the "Money Back Line" on each bag and watch *results*. One Full Quarter of each bag is yours to try at our risk, without a pledge or promise. If you are not thoroughly pleased in every way, just write us, and we will send back every penny of your money, freely and willingly, and tell you where to send the feed that's left at our expense. *We pay the freight both ways.*

Results are what tell the story—not theories—and if you don't get these *results* from Purina Feeds—you are not a cent out of pocket and the feed used has cost you nothing.

There's a feed or combination for every purpose and for all seasons. Every one has been Tested, Tried and Proved until we know that it is perfect for the purpose.

THE ACME MILLS COMPANY MADE THE TESTS

and have done it so thoroughly that every element of doubt, guesswork or uncertainty has been removed.

There are just three different elements prepared differently and in different combinations used in Purina Feeds. There are no medicines, condiments *or grit* in Purina Poultry Feeds.

FIRST—Clean, thoroughly ripened, perfectly sound grain and seeds without dust or smut,—fifteen or more kinds.

SECOND—Sweet, tender Alfalfa tops and leaves, perfectly green and well cured—no first cutting stemmy Alfalfa is used.

THIRD—Untainted lean meat, dried while fresh.

One kind of feed saves the lives of Little Chicks—brings up the largest percentage of every hatch to maturity in 60 to 90 days—healthy, vigorous and strong.

Other kinds and combinations.

Make *eggs*—make it possible to secure every egg your Hens are capable of producing.

Make sweet, tender, juicy flesh—delicate and toothsome as a milk-fed capon.

Make your *fowls fat* for marketing in the shortest possible time.

But—don't believe this until you have tried Purina Feeds at our risk—till you have proved their worth on your own Hens and Chicks and have the *results* right before your eyes.

This **Trial Offer** is good for 30 days from the date of this paper **Only.** Fill out this Order Blank and mail to-day.

FREE TRIAL ORDER COUPON

Acme Mills —I enclose $4.00 in ________ for which please send four 40-lb. bags all freight prepaid, of your Purina Poultry Feeds, as designated below, with the distinct understanding that if I am not fully satisfied in every particular after I have used down to the trial line on each bag, you will accept, at the freight depot, the balance of the feed I have not used, if I return it within 30 days from my receipt of same, and that you will immediately, upon my notification to such effect, return to me my entire $4.00, without any reduction for the feed used in the trial, thus making it a Free Trial in case I am not suited.

1	40-lb Bag	Purina Mash . .	$1 25
1	"	" Scratch Feed	1 00
1	"	" Chick Feed	1 25
1	"	Acalfa Meal . .	1 00

Note:—You may omit one or more of above items, if desired, and may order TWO bags, but not more, of any one item.

Total value . . .	4 50
Less Trial Order Discount	50
Net Combination Price .	4 00

Ship to ________ *Town* ________ *State* ________

Please give name of best Poultry Feed dealer in your town ________

ACME MILLS COMPANY, PORTLAND, OREGON

Huskins' White Wyandottes

Prize winners for two years, 1905 and 1906, at L. A. Eggs for hatching from standard bred stock, $1.50 per dozen, or if you mention Cultivator, will send thirteen.

A. W. Huskins, 713 Waterloo St., **Los Angeles**

White Plymouth Rock Poultry Ranch

Eggs for hatching from First-Class Stock $6.00 per 100. $1.50 per setting 15 eggs.

J. T. DAVIS, Prop. POMONA. CAL.

Blue Andalusian Eggs

$1.50 and $2.00 for 15, $7.00 per 100. Free range. I raised and sold cockerel winning first prize at late L. A. poultry show. Stock. ***Mrs. J. S. Dull, 3145 S. Hoover St., Los Angeles, Cal.***

White Wyandotte Eggs

For hatching. Pure Dustin & Hallack strain. From 1st Pen, $3.50 per setting, 2nd pen, $2.50.

Mrs. S. H. Church, 505 S. Main St., Los Angeles

White Plymouth Rocks

Standard Bred. Eggs for hatching, 10c each. Incubator lots, $7.00 per hundred.

O. M. Johnson, Gardena, Cal.

Yards at Strawberry Park, on electric lines.

S.C. White Leghorns Indian Runner Ducks

Eggs, $1 per setting, or $5 per 100. Leghorns of McFarlane strain Fertility high, 80% guaranteed. ***J. E. Beadle, 901 No. St. Louis St., Los Angeles.***

Single Comb Brown Leghorns

Exclusively

Stock for sale and eggs for hatching. Eggs from first pen $2.00 per 15 eggs, second pen $1.50 per 15. Incubator lots for $6.00 per 100 eggs. They have always won first prize whenever shown. Large birds and heavy layers.

W. E. Mercer - - Ventura, Cal.

A POULTRY COLONY

NEAR LOS ANGELES

Is at present being formed for the purpose of mutual benefit. Situation unexcelled; plenty of good water, splendid soil and close to town. For particulars apply to

Anna L. Pinkerton

Realty Trust Company, 129 So. Broadway, Los Angeles, Cal.

Fairview Poultry Yards

SILVER LACED WYANDOTTES

Two pens, both headed by prize-winning cockerels; 1st at Los Angeles and 1st at San Diego. Four prize-winning females in pens. Eggs, $1.50 per 15.

WHITE PLYMOUTH ROCKS

Special mating, pen headed by Fairview Prince, a son of the best layer in our yards, $1.50 per 15. Five pens large MATURE hens mated to vigorous Cockerels, $1 per 15 eggs; $5 per 100. Eggs from these pens specially recommended for incubator hatching.

A. E. NELSON, EL MONTE, CAL.

Golden Crest Poultry Yards

White Leghorns—Eggs, 50c per setting, from pens of Petaluma's best laying strain. $3.00 per 100.

Barred Rocks—75c per setting.

Prize winning **White Crested Black Polish** my specialty.

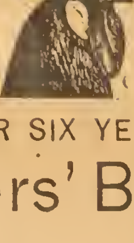
Geo. H. Randall
C St., Santa Ana

30 DAYS TRIAL

Buy From Our Factory—Save One-Third.

PRACTICAL INCUBATORS positively the best. Hatches more and stronger chicks. 10 YEARS' GUARANTEE

Cal. free. PRACTICAL INC. CO., 720 S. 11th St. San Jose, Cal.



FOR SIX YEARS

Albers' Black Minorcas

Have led in the shows **every year,** and they lead all breeds in egg production all the time. Eggs in large or small lots. Stock for sale. Circular free.

GEO. R. ALBERS
4849 MARMION WAY LOS ANGELES, CAL.

of a good lice killer. I can keep my roosts clean but hens have body lice.

Answer. You can make pure blood meal by putting the blood when it coagulates into a bag and boiling it. Boil about ten minutes for each pint. Then dry it and it will crumble. Or you can simply boil the blood and strain out the thick part after the rest is white as water. I tried and prefer the first way.

Or you can use the blool by scalding it and mixing it thick with bran or cornmeal. I do not know the nutritive ratio of raw blood.

Lambert's Death to Lice is an excellent powder for killing lice. You can also make a good lice powder by taking a peck of air slacked lime, add to it an ounce of 90 per cent. carbolic acid, stir thoroughly, add a peck of tobacco dust, mix well. Recipe 2. Sifted coal ashes, half a peck; Lee's Lice Killer, half a cup and half peck tobacco dust. Mix thoroughly. Dig up a space in the yard for the hens to bathe in, empty ashes out of cook stove in a heap and they will keep clean.

* * *

Eversion of oviduct. (Novice, Santa Monica.) Kindly inform subscriber to your valuable paper the probable trouble with Barred Plymouth Rock pullet found dead on nest. On examining vent found liver colored substance, as though partly turned inside out.

Your pullet died of prolapsus or eversion of the oviduct. It usually comes from eggs being too large, or from too stimulating food or condiments, constipation or any condition which prevents the passage of the egg.

* * *

Editor Culivator—What is earliest age to feed Leghorn chicks a little whole wheat in way of weaning from ground mixed feed?

Answer. You can begin feeding whole wheat by mixing it with the finer feed as soon as the chicks will pick it up and swallow it; the sooner the better. Remember that chicks do best when they can have a variety of grains and green food, as well as animal food. When chicks are raised with a mother I always feed her wheat from the first and when they are two weeks old I see them eating a little.

FUTURE OF POULTRY RAISING IN CALIFORNIA.

Anna L. Pinkerton, inventor of the Queen Incubator at Lincoln, Neb., is now in California and doing good work for the state in calling attention of Easterners in letters to papers there to California advantages as a poultry producing section. In a letter to the Poultry Keeper she says:

Poultry raising is still in its infancy in the far West, in fact, it has hardly passed the experimental stage, but the possbilities are so great, and the certainty of success so absolute, that far-sighted men are investing their money in the industry on a scale that will make California, within the next five years, one of the greatest, if not the greatest poultry state in America.

Let us for a moment consider the reasons why California should be the great American raising ground, the source of the country's poultry supply.

The climate is so equable that there is no season of the year during which the fowls may not be allowed to run at large. This, in itself, is of the greatest advantage in the rearing of young chicks. In the Eastern climates it is almost impossible to successfully

SONOMA-AMERICAN INCUBATOR

Send for large circular fully describing these machines.

Sonoma-American Incubator Co., - Petaluma, Cal.

EGGS FOR HATCHING

from a heavy-laying strain of

SINGLE COMB WHITE LEGHORNS

I guarantee 100% fertile. Write for prices.

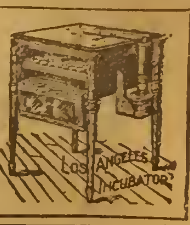
Golden State Poultry Yards, Lordsburg, Cal.
T. E. Mills, Prop. Home Phone 1720

Standard Bred S. C. White Leghorns

EXTRA LARGE BIRDS AND HEAVY LAYERS. Eggs, $2 per 15; $8 per 100; $60 per 1000 from January until July only.

CAPTAIN MITCHELL SANTA BARBARA, CAL.

Author of "A Practical Poultry Plant for Southern California," $1.25 cloth binding, on sale by Calif. Cultivator



SUCCESS

IS ATTAINED WITH

LOS ANGELES INCUBATORS

SEND FOR CATALOGUE

LEE'S LICE KILLER | EGG MAKER | LARGEST POULTRY SUPPLY HOUSE IN THE U. S.

HENRY ALBERS 315 S. MAIN ST. LOS AGNELES

IF YOU HAVE NOT USED

EGG FOOD A·C·W IT FILLS THE BILL

The A. C, W. Products for your poultry you have missed a good thing and your poultry have lost good food. This is an age of progression. We have learned much in the last few years and live in hopes of learning more. What we and others have learned in the art of poultry feeding we give you in **our** scientifically prepared and **practically** tested products.

The A.C. W. Chick Food is the talk of poultrymen. Then our goods are guaranteed pure, sacks sealed too and we stand behind the guarantee. MONEY BACK if goods not as represented.

Honesty is the best policy, and it pays. Come and see us personally at any time. We are always busy but will take time to talk, show and explain. If your dealer has not our goods yet, give us his name and we will supply yon direct.

We manufacture special pure bone for Chickens, Blood and Meat Meal, Beef Scrap etc., from U. S. Government inspected stock.

Agricultural Chemical Works

Phones: Home 6063; Sunset, Boyle 3. 901-907 Macy Street, Los Angeles

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Setting Eggs For Sale.

As follows: Mammoth Bronze Turkey, White Pekin Ducks, Black Minorca, Blue Andalusian, Buff Orpington, Buff, Barred and White Rocks, White and Brown Leghorns. Prices range from $1.00 to $3.00 per setting.

H. H. HOLLAND, EL ORO POULTRY FARM, Fresno, California.

West Coast Chick Feed

A perfectly balanced ration for the growing chicks. All pure food, no filler, no waste, hence cheapest. Keeps them growing and healthy. Made by

WEST COAST STOCK FOOD CO.

818 San Fernando St. (through to Alameda) Los Angeles, Cal.

SAM'L R. KELLAM, President of the L. A. Co. Poultry Association, says: "West Coast Chick Feed is the best feed for young chicks I have ever used."

MRS. A. BASLEY, the celebrated poultry authority says: "I want some more of your West Coast Chick Feed for it is excellent. It is purer, cleaner and appears better balanced than other feed I have been using, and to tell you the truth I have been experimenting feeeding both together and they always eat yours in preference."

S. M BUTLER, Lamanda Park, the well known poultry judge and successful breeder, says: "I want to say that too much praise can't be given West Coast Chick Feed for growing Chicks."

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MARDEN EGG FARM

HYNES, CALIFORNIA

Breeders of S. C. White Leghorns Exclusively

Fine Feathers alone do not make the profitable hen. Our fowls have the reputation of being ***extra large, handsome*** and ***extra heavy layers.*** Last season, our eggs averaged over 95 per cent. fertile. ***Remember***—In getting eggs from us, you do not get them from the general runs. We have but one grade of eggs to sell for hatching and those are from our breeding pen composed of only the choicest fowls, selected from hundreds that are ***bred to lay.*** Hens that approach the ***200 egg record.***

Price of Eggs—$1.50 per 15, $5 per 100. ***Send for Illustrated Catalogue. Address,***

LEO. W. MARDEN, Manager

raise broods of chicks during the winter months, as fowls raised in artificially heated houses, even did they survive the rigors of the winter, would be weaklings. In California it is possible to keep your incubators going the whole year round and chicks hatched in December are as healthy and will grow as rapidly as those hatched in any other month.

But it is not only its mild winters which marks California as the logical supply source of poultry products. Summer in California is a second edition of winter with the rain left out, the humid atmosphere of the East is unknown.

There is a market for every chicken and egg produced in the state, and it is only fair to presume that as the state grows, as it is bound to, the demand will increase in proportion.

In addition to the income derived from the poultry on a ranch, there is always an additional revenue to be made from the fruit trees which can be planted to advantage over the entire stretch of land.

BUTTERMILK FOR CHICKENS.

F. A. Leighton, local manager of the Beatrice (Ia.) Creamery Company, has taken up with the superintendent of the company the project of establishing a large poultry farm in the vicinity of Des Moines. The principal reason for taking up this business would be to utilize to advantage the great amount of buttermilk which the company has not been able to handle profitably. It has been found that buttermilk fed chickens bring fancy prices because of the quality of their meat and the plumpness which comes to the fowls after having been fed on buttermilk. The company has contracts now with Swift & Co., who are using it to fatten chickens bought over the state before killing and dressing them. Swift's principal Iowa feeding point is Ottumwa. The Beatrice company also ships buttermilk elsewhere and sells quantities of it about town, and yet is not able to dispose of it to any advantage.

FRESH AIR AND WARMTH.

Fresh air is demanded by all classes of live stock (including poultry), but in winter the farmer should endeavor to give an abundance of fresh air without crowding his flocks. Cold draughts chill the fowls, while crowding them is going to the other extreme. The great fault of houses generally is that they are not sufficiently ventilated, or are too much so, the consequences being that fatal diseases are generated, causing destruction of the flock before the diseases can be stopped. If it is desired to increase the warmth of the house sliding windows, four or five feet high, as wide as desired, may be set to the south side of the house. Put wire netting against these, so that the hens cannot fly or jump against the glass and break it. These can be removed during warm weather, and a whole side of the poultry house may be left open. In this case it would be so well ventilated that the front side need not be over seven feet, and the roof not carried up high. For the perches, strips of scantling two by three inches are also excellent. Set all roosts at the same height, and so distant from each other that the hens on each perch cannot reach those on the other.—Farm and Fireside.

Mate your best stock a few days before selecting eggs for setting and you will be more sure of getting fertile eggs, and of the desired mating.

Eggs for hatching should be fresh—fresher the better.

BUFF LEGHORNS
Eggs for hatching from the famous J. W. Miller strain, Freeport, Ill. $1.25 per 15
CHAS. G. MILLER, 40 Elm St WATSONVILLE, CAL

Buff and Black Orpingtons
Buff and Brown Leghorns
Indian Runner Ducks--Bronze Turkeys
Eggs and Young Stock in Season
W. W. Bliss - Duarte, Cal.

Chickens and Eggs
Having handled Poultry in this market for the past thirty years, we can give you the best results and prompt returns.
D. E. Allison & Co., Inc.
119-123 Washington St., San Francisco

$8.00 COCHINS $8.00
A Trio—Buff, Black or White
Send for circular, giving undefeated show records. These are the best winter layers, finest table fowls, and by far the most healthy and hardy. Eggs, $2.00 per setting of 15. Prize winners, Eggs, $3.
HARRY McINTIRE,
SAN DIEGO, = = = CALIFORNIA.

Start Right.

Here is an opportunity to procure some A. 1 stock for beginners in the poultry business.

We have a limited number of choice hens of the single comb White Leghorn variety a year to one and a half years old at $15.00 per dozen and upward.

A fine selection of S. C. White Leghorn roosters at $2.00 and upward each. A limited number of fine S C. White Leghorn pullets 5 to 6 months old at $15.00 per dozen.

We not only manufacture incubators, Brooders and all kinds of poultry supplies but we are the most extensive hatchers of chicks in the world.

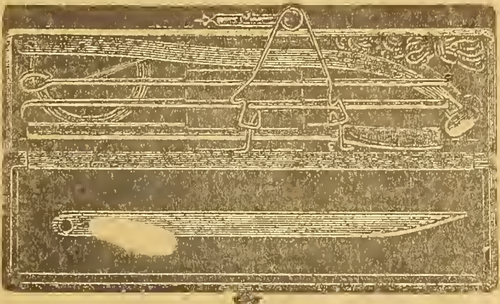
Write for prices on chicks.

Write for our New Illustrated Catalogue B.
MUST HATCH INCUBATOR CO.
Petaluma, California.

THE FEATHERLEY FARM ORPINGTONS
Over 30 prizes, specials and cups in **Buff, Black and White Orpingtons** on 27 entries this year at San Francisco, San Diego and Los Angeles. Bred for utility and egg purposes, as well as prize winning qualities. Eggs from $2 to $3 a setting. Write for free mating list, describing my ten prize yards.
P. L. Harley, Box C, Redlands, Cal.

WHITE WYANDOTTES
200-250 Egg Fowls **16 Prizes San Francisco**
Scored by T. E. Orr, eminent Eastern Judge. Our "Cream of the Coast" White Wyandottes swept the deck at San Francisco. Unsurpassed as layers and as exhibition birds.
Beautiful Circular Free, giving pictures of our prize winners, description of our matings and prices. Settings and Incubator Lots; Pens and Cockerels.
Eggs, $2.00, $3 00 and $5 00 per 15. Per 100, $7.00, $10.00 and $15.00. Clear eggs replaced. **We prepay express.**
CAPITOL AVENUE POULTRY FARM
A. L. R. MANTZ Rural 21, Box 98k SAN JOSE, CAL.

Dean's Pacific is an Incubator built on scientific plans and has all the latest improvements. Every machine guaranteed. "Facts From Experience" and Catalog for the asking. Address ***Dean's Place, 2509 Central Avenue, Los Angeles.***



Caponizing Set
Double Your Profits by Caponizing.
Complete with Instructions, $2.50, Postpaid
STOCKMEN'S SUPPLY CO.
FRESNO, CALIFORNIA

Mission View Poultry Ranch
Largest Breeder of WHITE WYANDOTTES on the Pacific Coast
¼ Wild Mammouth Bronze Turkeys.
1906 Winnings 32 Prizes Write for Circular Clear Eggs Replaced
MRS. C. D. HUBBARD,
Box 282 San Fernando, Cal.
White Wyandotte Stock for sale, $1.50 and up.

Emery's Pure Meat Meal
Don't believe all we say, but just enough to buy our Poultry Foods
Ask your nearest dealer for them and take no imitations
Emery's "B. B. & B."
THE PACIFIC GUANO & FERTILIZER CO. Successors to N. Ohlandt & Co San Francisco, Cal.

"The Proof of the Egg and Chick Foods in the Results."

Give a trial order for

EXCELSIOR FOODS

And watch results. **Excelsior Chick Food** will raise 98% of your chicks. It is all right and gives a healthy lot of chicks. **Excelsior Egg Food** is another money maker. It is a complete food and keeps hens healthy and in good laying condition.

Besides, we put up Excelsior Fattening Food and Excelsior Moulting Food. Regarding these foods we issue a little leaflet in which we give description and illustration of fattening coop. If you will write us and mention "Cultivator" we will mail you one.

Del Monte Milling Co.
242 Central Avenue - - Los Angeles, Cal.

Chamberlain's Perfect Chick Feed

"Nothing Just as Good"

World's Chick Feed of To-Day. The only original **Dry Chick Feed.** All others are worthless imitations. **Chamberlain's Perfect Chick Feed** was used exclusively at the great St. Louis World's Fair during the 7 months. This the highest compliment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.

CHAMBERLAIN'S PERFECT MASH EGG FEED,
THE WORLD'S GREATEST EGG PRODUCER.

"Nothing Just as Good"

GERMAIN SEED CO.,
Pacific Coast Agents. LOS ANGELES, CALA,
SPECIAL PRICES ON TON LOTS.
Distributing Agents: FREDERICK BROWN, San Jose; CHAS. H NEARPASS, San Diego; CHANNEL COMMERCIAL CO., Santa Barbara and Ventura.

FREE BOOK

"Raising Chickens"

The Coulson Poultry and Stock Food Co. at Petaluma, Cal., has got out a very fine Book about "RAISING CHICKENS."

This book shows photographs of many of the largest and successful poultry farms and ranches of the Pacific Coast.

Some of these are reproduced in colors by what is called Lukagraph process, showing the beautiful white chickens, with red combs; and the basketful of fresh laid eggs, the green grass on the hills, etc. These pictures have a very pretty and pleasing effect, and make the book very interesting to read. It gives stories of Poultry Success—tells how farmers have a Gold Mine in poultry and hogs.

It tells how the different ones raise the little chicks—how to feed them and care for them, and also tells how to get $4.00 worth of eggs from one hen in a year.

Every farmer's wife should send and get one of these books. Every poultry raiser who gets one of these books will think he has struck it rich.

The book contains more than **50,000 words** and occupies **10,000 square inches of paper.** illustrated with **200 pictures** which represent about **2590 square inches of engravings.**

The book cost the Coulson Co. several thousand dollars, and is written for the benefit of the poultry industry of California.

If you intend to have any young chicks to raise, or are in any way interested in poultry, it will be to your interest to get one of these books—**NOW**—while you have the chance, and before you forget about it.

Remember, the book is free, providing you send 10 cents to pay postage.

104 large pages—California Poultry Farms—illustrated in beautiful colored engravings.

The Farmer's Gold Mine, page 60.

Coulson Co. Experimental Poultry Farm, Page 1.

How to make $1000.00 Fattening Hogs, Page 61.

Feeding 20,000 Chickens, Page 85.

$1100.00 worth of Eggs from 100 Laying Hens, Page 39.

A Million Dollars for the Benefit of the Poultry Raisers, Page 94.

One Acre of Hens paid more than 100 acres in grain, Page 39.

View of Colony Houses on large Poultry Farms, Page 87,

He sat down most of his time, Page 56.

Steamers loaded with feed for chickens going up the river, Page 50-52.

Story of the Greatest Chicken Village in the World, Page 10.

How to care for Young Chicks in the brooder, how to feed the young chicks, how to feed the hens to make the most money, etc.

It cost us about $2000.00 to put out this large book; it took about three tons of the best paper and hundreds of engravings. Three large printing establishments worked on it for months, kept the presses going day and night.

It took an engraving establishment two months to make half-tone engravings and yet—after all this labor—we are going to give one book, **TO YOU—FREE.** The paper in it weighs nearly a pound—send 10c for postage, your name, and P. O. Address, and let us know how many chickens you keep and what other stock.

Address Advertising Department.

Coulson
Poultry
and Stock
Food Co.
Petaluma, California

Photograph Taken on McDonald's Ranch. 10 Weeks Old Chicks Raised on Coulson's Chick Feed.

If Mr. McDonald can raise chickens like these by feeding them Coulson's special Chick Food, why not you? Suppose you give Coulson's Chick Food a trial. It will not cost you but a trifle more than other feed and the way it makes chicks grow is marvelous.

A Month Ahead of Your Neighbor

By feeding your little chicks Coulson's Special Dry Chick Food, they will do so well and grow so fast, and be so lively and healthy(that they will reach the average weight of 2 1-2 pounds apiece, a month sooner than your neighbors', who feed some other kind of feed.

$1.00 a Dozen More

By feeding your chicks on Coulson's Special Dry Chick Food they will be so large and plump, that, besides sending them to market sooner, you will get from 50c to 75c and possibly $1.00 a dozen more for the broilers or fryers, than your neighbor, who has chicks of the same age and who feeds some other kind of feed.

Results Will Surprise You

As Mr. Ward, proprietor of the Glendale Poultry Farm wrote; "Fed a flock of chickens on Coulson's Special Dry Chick Feed up to 3 monthsof age, and the results were a SURPRISE TO ME. The birds were large, and the cockerels I sold to a market in San Francisco, and GOT A BIG PRICE with a REQUEST TO SEND MORE to them at any time I had more cockerels of the same QUALITY.

Ask Your Dealer For It

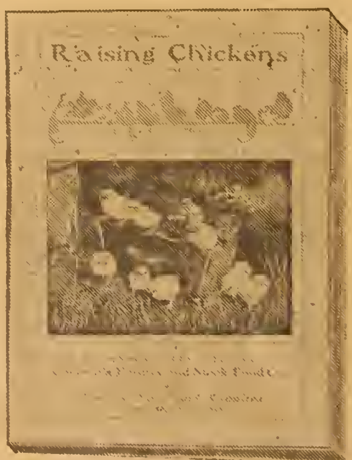
You should be able to get COULSON'S SPECIAL DRY CHICK FEED at most any feed store. In case you can't find it at the stores, "DON'T ACCEPT A SUBSTITUTE." He may tell you: "I have several kinds of chick feed that are just as good as, good and cheaper." Those kinds do for people who don't know their own best interests—but not for YOU.

You are going to get COULSON'S SPECIAL—you are going to put your chicks on the market a month sooner—you are going to get more for them—you are going to raise nicef and larger chicks, and you know that COULSON'S SPECIAL DRY CHICK FEED is what you want, and what you are going to have, because you know it GOES TWICE AS FAR as any other feed, and such splendid results.

We Ship It—If the Stores Don't Have It

If you can't get it at some store in your town. send to us $3.00 and we will send you a 100-lb. sack by next freight. For $4.00 we will send it freight paid; for $7.50, 200-lbs., freight paid; for $17.50, 500 pounds, freight paid Ask your dealer first. If he hasn't it then send to us. We remain at your service,

COULSON POULTRY & STOCK FOOD CO.



CUT THIS OUT:

Coulson Poultry and Stock Food Co.,

Gentlemen: I will accept your offer of one of the books "Raising Chickens," and enclosed please find 10 cents postage for same. In case I am too late to get one of these books, the 10 cents postage will be returned to me.

I now keep: No. of hens............No. of young chicks...............

No. of turkeys...........

My name is...

P. O. Address........................ ....

Queries and Replies

MARKET REPORTS.

Editor Cultivator: In Cultivator of March 23, you quote light amber honey at 6 cts. Will you kindly inform me on what authority you make this statement? Is it possible there can be such a difference in Los Angeles and Redlands prices? Here we are offeredo 3¾c.—J. H. A., Craftonville.

While you are paid but 3¾ cents for your honey, it is wholesaled at 6 cents to the grocer, who in turn retails it at 10 cents. For our market reports we go to the firms who buy your honey. We have no recourse but to print the prices which they give us. These are jobbers prices or the price at which honey is wholesaled. You will find the same scale of prices quoted in all the daily papers as well. The same is true of all commodities and all market reports. We have no way of finding out what the producers can obtain except we have honey to sell.

EGYPTIAN CLOVER.

Editor Cultivator:—Has the Egyptian Clover (berseem) been experimented with in Southern California, and if so, with what results? Is it more tolerant of alkali than alfalfa?—E. V., Santa Ana.

So far Berseem cannot compare with alfalfa as an alkali or salt resistant plant. Alfalfa is a deep rooting plant and Berseem is not. It has been tried in several places on the Colorado desert and alfalfa has discounted it more than ten to one, both under like conditions.

CULTIVATING STRAWBERRIES.

Editor Cultivator:—Will you please tell me how to cultivate strawberries? Should they be hoed around or just let stand and keep the weeds out? Also how often should they be irrigated?—Subscriber.

If you are growing strawberries on a large scale, it is necesary to do some cultivation, but the ground should not be cultivated deep as the roots are shallow feeders and they must not be disturbed. If you have but a few garden rows, we would mulch with straw. If you have a larger area, straw is better than cultivation provided the straw is available. The period of irrigation will have to be governed by the character of the soil. Nobody can determine that as well as yourself.

MILDEW ON ROSES.

Editor Cultivator:—Can you tell me what to do to stop the mildew on rose bushes? I have two climbing rose bushes which were affected so badly last summer that the leaves dropped off. I thought they would die, but this winter they seemed to recover, put forth a heavy growth, and are full of blossoms, but I notice that the blight or mildew, as they call it, is beginning to appear again. The leaves wilt, turn yellow, and then drop off. They have a strong, musty odor. Any information you can give me either through the columns of the Cultivator or by mail will be greatly appreciated—W. M. C., Lindsay.

Spray the bushes with Bordeaux after the blooming period in the fall and when the young growth starts dust the plants in the morning while the dew is on them with finely ground sulphur. Sprinkle some on the ground beneath the bushes also. Repeat this operation three or four times during the spring and summer and the mildew will be killed.

GUM ON PEACH TREES.

Editor Cultivator:—What is the matter with our peach trees? I send two samples. The trees look as though fire had been built under them, being the worst afflicted at the bottom. The blight or whatever it is seems general throughout this section, and will surely make a short crop of peaches in this vicinity. Please give opinion, information, and remedy if possible.—E. A., Selma.

The sample shows that the trees are afflicted with some sort of gum disease, but what the cause is can perhaps only be determined by careful investigation by some person who understands plant diseases. Very often a malady will prevail that is caused by climatic conditions, and it is our opinion that this trouble will disappear after a while provided the trees come out in good shape during the summer. If it is a disease that is caused by germs getting a foothold from without, lime, salt and sulphur will help it out, but if it is a disease of the sap, which it appears to be, such sprays will not help it. It is our opinion that it will pass away in time. We have noticed the same trouble in other deciduous trees which have recovered. We would try splitting the bark on a few trees to see what effect it had. See also "Fungus disease in the peach section," on the "California Horticulturally" page.

FUMIGATING.

Edtor Cultivator:—Will you kindly tell me through your paper how to use cyanid of potash for fumigating a house?—Subscriber, Pomona.

Stop up all the cracks around the doors and windows, leave all the inside doors open, and fix the windows so they may be opened from the outside. Also keep all the door keys so that the doors may be opened from the outside. Figure the contents in cubic feet of all the inside space in the house. For every 100 cubic feet use two ounces of cyanide. For every ounce of cyanide use one ounce of sulphuric acid and two ounces of water. This dose is twice as strong as is usually applied to orange trees. It will injure no goods which might be in the building. Open the house and allow it to ventilate an hour before entering.

We suggest that you use formaldehyde. It is much more effective in destroying germs and not so dangerous. A pint of this evaporated over a stove will disinfect a large house Keep the house closed at least two hours with either of these materials.

RESERVOIR QUERY.

How large a reservoir will it require to hold a miner's inch of water with 50-inch head for 12 hours, and how heavy should the wall be? How many barrels of cement will it require and how to guage the amount of water in the reservoir?—J. A. D., Charter Oak.

The above query is not very definite, but we suppose it is intended to build a reservoir to contain the water which will run through an opening 1 inch square under 50 inches pressure in 12 hours. A miner's inch of water, as is usually run in California, is that amount which will run through an inch square opening under a 4-inch pressure, and is 6480 gallons in 12 hours. The amount which will pass through the same opening under 50 inches pressure will be about three times as much, or 19,500 gallons. This will require a reservoir 25 feet by 25 feet 4 feet deep.

The wall of such a reservoir will be safe if made 4 inches thick of clean gravel with good cement in the ratio of six parts of gravel to one part of cement, well mixed and well tamped. The wall should have a support of earth reaching to the top on the outside, which has been well puddled as it is put in place.

The materials required will be six cubic yards of gravel, which must be clean, and seven barrels of cement.

Gauging, or measuring, the reservoir when partly filled can be readily done by remembering that it will take 400 gallons of water to fill the reservoir one inch in depth.

In the above it is supposed that the bottom will be of earth, without cement.

The new Cudahy Packing Company's storage and distributing warehouse at San Bernardino is to be built of moulded cement building blocks.

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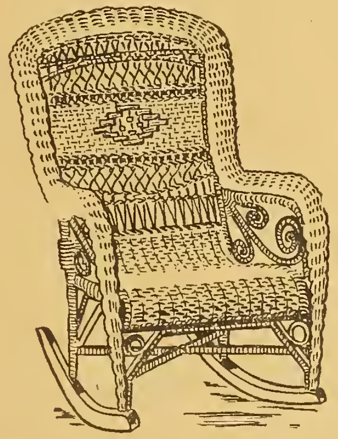

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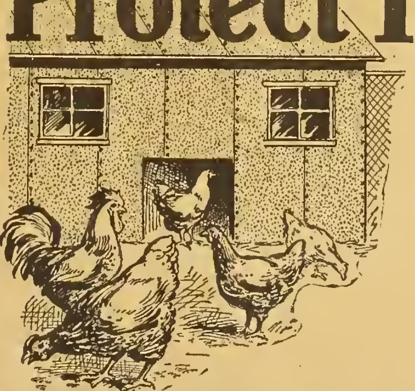

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Household Department

HE DIDN'T SELL.

Farmer Thompson got discouraged,
And thought he'd sell the farm,
To be sure, he was doing well—
Had no reason for alarm.
His finances were excellent,
As his bank account well told;
He simply got to feeling blue,
And the farm was to be sold.

So he gave it to an agent
In a little town nearby,
With only these instructions—
Just sell it on the fly.
In his little local paper
The description came to hand.
He looked it up and found it
In a column headed "Land."

"Finest farm in Banner township;
The gem of all my list.
If you're looking for a bargain,
This farm should not be missed.
This year the corn made sixty,
And thirty-five the wheat;
From the view-point of production
This one can not be beat.
The best for miles around;
And every convenience
Upon the farm is found."

Amazement sat upon him
As he perused the list,
And long before he finished
He was reading thro' a mist.
He hurried to the telephone,
Called the agent with a yell,
Saying, "Take my farm right off your list,
I've concluded not to sell."

—*D. M. Hatch.*

THE LITTLE GIRL AT THE WINDOW.

Hazel had thought a good deal about the little girl at the window. She had such a sober little face and such wishful blue eyes, and she was always waiting at that same second-story window in the big tenement that stretched clear up to Hazel's back yard. At least she was there every time Hazel looked, and that had been a good many times those last few days, for some way she could not keep that pale, listless little face out of her mind.

The Camerons had only moved into that part of the city the week before. Until that time they had lived in a flat, so it seemed quite wonderful to Hazel to have a whole house to themselves, and better yet to have a yard—yes, two yards, for there was a front yard and a back yard with the house. She had always wanted a flower-garden, but there had never been a foot of ground with the flats. Now, however, her dream of pansy faces, of bright tulips, of great fragrant bunches of sweet peas was about to be realized. Her mother had told her that she might have two beds in the front yard and plant what she pleased. She could hardly wait for her father to dig the ground, and at first spent nearly all her spare time planning just what flowers she would have and just where she would plant each one. She was a genuine little flower-lover, and never tired of studying the seed catalogues.

But the last few days her interest had wavered between her flowers and the little girl in the window. Every time Hazel went into the back yard she saw her there, sitting in just the same place, looking listlessly out of the window. She wondered why, and why she looked so sober, and why there never seemed to be any one else in the room, and a great many more "whys?"

One morning, earlier than usual, she looked up at the window, and the little girl was not there. "It must be she isn't up yet," she thought. But just then a woman came to the window with the little girl in her arms and put her down very carefully in the chair. It flashed through Hazel's mind why the little girl always stayed in one place and why she was so pale; it must be she was sick. Hazel's eyes grew tender with sympathy, for she had been shut up in the house with the measles the summer before, and she knew just how hard it seemed; that is she thought she knew, but she changed her mind about that a few minutes later.

In a little while the woman came to the window with her hat on, carrying a plate and a cup. She set these on a stand near the chair, kissed the little girl and went away. Hazel knew that she had probably gone to her work, and would not be back before night. Her brown eyes were full of sympathy. Poor little girl! It must be hard not only to be sick, but to have to stay alone all day without even a doll or a kitten to keep her company. She remembered how lonesome she used to get, even with her mother there and two kittens, four dolls, a big pile of story-books and lots of other things.

Just then her mother called her to breakfast. But all day she kept thinking of the little girl and wishing she could do something to make her happy. Several times she looked up art the window. Yes, she was still there, and her face looked paler and more sober than ever.

Hazel wished she dared go up to visit her and carry books and games so she would have something with which to amuse herself during the long days; but Hazel was a shy little girl and could not make up her mind to go. She thought and thought and planned a great many things to do for the little girl; but some way she did not dare carry out any of the plans. If the window had been on the ground floor she felt certain she could have made friends, but she had not courage to go to the big tenement and inquire the way up to her room.

A few mornings afterward when he kissed her good-by her father said, "Well Chicken, I'll try to get home early enough to spade up the ground for your garden this afternoon."

"O goody!" Hazel danced up and down and clapped her hands. She got out her packages of seeds and planned the garden all out once more just the way she wanted it.

Then she remembered the little girl in the window and wished she could come down and help. Some way it seemed almost selfish to have such a good time when the little girl up there was so lonesome.

By and by she thought of something. Her eyes grew bright and she clapped her hands softly. This time she was sure she had thought of a plan.

Half an hour later her mother was surprised to have Hazel ask if she might have her garden in the back yard.

"Why, child," her mother said, "what in the world do you want your garden way back there for? It's much prettier here in the front yard."

Then the story about the little girl came out. "And I thought if I made my garden in the back yard, she could watch things grow and see the flowers and may be it would seem a little bit like having a garden of her own," Hazel concluded, her eyes as bright at stars.

Her mother readily consented when she knew why Hazel had changed her mind; so the little girl spent the rest of the day replanning her garden.

She kept looking up at the child at the window while her father was spading up the ground that afternoon. She smiled happily to herself when she saw the pale little face pressed close to the window. And when the little girl smiled back Hazel felt as if they were beginning to get acquainted. "Just think, papa," she said, "that's the very first time I ever saw her smile; I don't believe she ever did smile before."

The next morning Hazel was out bright and early sowing her seeds. But she was not too early for the little girl in the window. "She looks happier already; doesn't she, mamma?" Hazel asked eagerly. "And I know when the plants begin to grow she'll like to watch them. Just think, there hasn't been a thing that was pretty for her to look at."

Her mother smiled and stroked back the brown curls tenderly. She thought her little girl's sunshiny face would make almost any one happier.

The days went by and Hazel spent a large share of her time working in the garden, and the little girl in the window watched. They always smiled at each other now; but that was all. Hazel's cheeks were growing rosy and brown with the exercise and the fresh air; and the pale little face in the window was losing its listlessness and growing almost happy.

The plants grew finely, and at last one morning there was a blossom. The little girl in the window saw it first. The window was up now and when Hazel came into the yard she was leaning out, breathlessly watching to see what Hazel would do.

What Hazel did was to clap her hands and dance all about the garden. Then

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she dropped down on her knees and buried her small nose in the heart of the flower. She looked up to see if the other little girl had seen it, too. "O, aren't you glad!" she cried. That was the first time the child ever had spoken.

After that blossoms came thick and fast. Hazel picked a big bunch a few days later. She looked up at the window thoughtfully; then her face brightened. "You tell your mamma to give you a long string," she called; "then tomorrow you can let it down and I'll tie the flowers to it, and you can pull them up."

So every little while a big bunch of flowers went up to the window and was put into a glass of water on the stand. The little girl looked and looked at them, and buried her pale face lovingly in their fragrant depths and talked to them, telling them everything that was in her heart, just as if they understood. She was not lonesome any more.

One evening in the early fall Hazel went out into the back yard and looked up at the window as usual. Then her eyes grew round with surprise, for the little face up there seemed fairly shining with happiness. "What do you suppose?" a glad little voice called down; then ran on, too eager to wait for a reply. "The doctor says I'm going to get well!"

Hazel clapped her hands. "O, I'm so glad!" she cried.

"And what do you suppose he says cured me?" the eager little voice went on.

Hazel shook her head; she could not guess.

"He says the flowers cured me!" She pressed her cheek lovingly against the big bunch of blossoms beside her.

Just then her mother came to the window and put a work-hardened hand on the fair hair, her face shining with a great happiness. "Indeed they did cure her, Miss," she said, smiling down at Hazel. 'The doctor said she was all run down and never would have got well sitting here alone all day with nothing to interest her. He said she would have died before this if it hadn't been for those flowers. But she has got stronger every day since she got interested in them; they seemed to be such company. And now the doctor says she is really going to get well." There were tears no the mother's thin cheeks, but they were happy tears.

"O, I'm so glad, so glad!" Hazel's own eyes were shining almost as brightly as the two pair of eyes in the window above. She flew into the house to tell her mother all about it. "O, mamma, you don't know how glad I am I had my flowers in the back yard this summer. Isn't it just lovely!" she concluded, breathlessly.—Marion Brier, in Congregationalist.

LIFE TOO SHORT.

"Life is too short for any bitter feeling;
Time is the best avenger, if we wait;
The years speed by and on their wings bear healing;
We have no room for anything like hate;
This solid truth the low mounds seem revealing—
That thick and fast about our feet are stealing,
Life seems too short."

"Is your father at home?" inquired the visitor of a little girl. "What is your name?" asked the child. "Just tell him that it is his old friend, Bill." "Then he is not at home, for I heard him tell mother if any bills came to say that he was not at home," responded the child.

A girl in West Virginia recently walked five miles in the rain to get married. She will probably not have to walk over a quarter of a mile in the rain and snow to get an armful of wood, in the near future.

A. PILLAR OF STRENGTH.

In writing as I do for numerous home and household departments, I study and strive to be helpful to my sister housewives. Do you realize, my dear mothers of families, and so much resting upon your shoulders—what a blessing daily good eyesight is? Very few people care for their eyes properly, and it is only when failing sight warns us of the danger, that we seem to realize the injury we are doing them. When for any reason the eyes become weak and inflamed, the lids red and swollen, dissolve a teaspoonful of boracic acid in a cupful of warm water, and bathe them in it every two hours during the day.

Noted oculists use this remedy and say it is perfectly safe and harmless. I have found such quick relief from this simple wash that I felt I might do good with it, especially with young mothers who live in the country and have to rely upon themselves oftentimes. Let such mothers and housewives fortify themselves with such safe remedies as boracic acid, for children often have weak, inflamed eyes from a cold. Then it is fine to gargle the throat with when sore or inflamed. It gives quick relief to gargle it and snuff up the nostrils for catarrh-colds.

SARA H. HENTON.

Boracic acid to be effective, should be chemically pure, and the amount used should not exceed 10 or 15 drops to the ounce of distilled water. If the housewife is going to be her own physician she ought to provide herself with a graduate glass for measuring, a distiller to get pure water, and have a fund of common sense behind her to avoid mistakes.—Ed.

ABOUT SWIMMING.

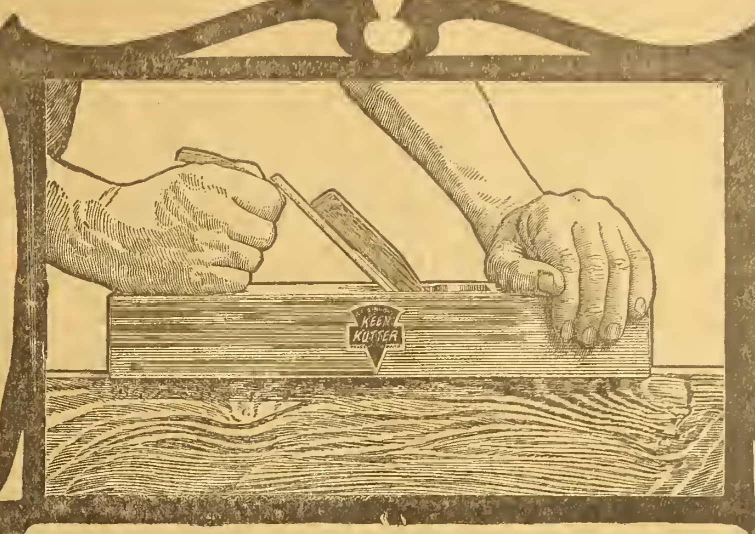
The sinking of the Valencia on the ocean, about a month ago, has turned the attention of the public to the art of swimming. Scores of persons doubtless might have been saved had they understood how to use life-preservers. Dozens of people died no doubt from fright, who might have been saved had they not known they could not swim and therefore were powerless to help themselves by taking advantage of circumstances.

Strange that man of all the animals is most helpless in the water, and stranger that as an adult he exhibits less capacity for self-preservation in it than does the infant. Falling into the water and strangling slightly, the frightened adult throws his arms into the air and sinks out of sight. Plunge a year-old babe in the water and he will right himself and strike out dog fashion with both hands, swimming.

Immersed in water, the body of the average man weighs one pound. If he keeps his mouth closed and his breath shut off he will float, head up, to the line of his eyes. Just how little effort there should be to keep his nose out of water is apparent. In thousands of emergencies a person needs only to keep afloat for a few minutes in order to be rescued.

But fright and shock and chill rob man of this power unless he be trained to the buoyancy of water. In the opening of the bathing season just at hand, no vacation resolve should be more closely adhered to and carried out than the resolve of a person to learn to swim.

It may mean life to himself because of the knowledge; it may be life to others. In any degree of efficiency at swimming there is pleasure and recreation, while in an emergency it is more than an art.



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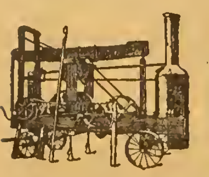

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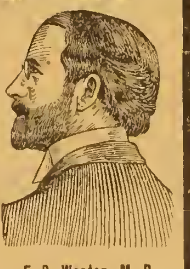

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Good schools, churches, etc; good roads A prosperous community, with a bright future.

Write for free printed matter.

Chas. F. O'Brien, Gen. Mgr.

30 Montgomery Street
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ROOFING

JUST THE THING ALL THE YEAR ROUND

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Samples and price list upon application.

C. SCHEERER & CO.

255 S. LOS ANGELES ST.

LOS ANGELES, CAL.

Climate and Crops

SACRAMENTO VALLEY.

The week began with generaly clear pleasant weather, except that strong north winds prevailed. The north wind continued until Thursday. On Friday abnormally warm weather occurred. In the northern portion of the valley maximum temperatures above 80° were reported. At Red Bluff the maximum temperature was 83° on the 5th and at Sacramento 74°. There was no rain. The river fell from a stage of 28.6 feet at Colusa at the beginning of the week, almost the highest water on record, to a stage of 22 feet at the close of the week. Considering the large volume of water in motion very little damage resulted. At Sacramento the river reached a height of 27.4 feet at the beginning of the week, and at the close of the week was below 25 feet. The snowfall in the Sierra was light during the week, but a large quantity of snow remains on the ground and is disappearing very slowly. At Summit at the close of the week 194 inches were reported on the ground, while last year at the same date the amount was 38 inches.

* * *

COAST AND BAY SECTIONS.

Seasonable weather without rain prevailed during the week, except on Thursday, when abnormally warm weather occurred. At San Francisco a maximum temperature of 76° occurred and equally high temperatures occurred at other points. Strong northwest winds were blowing at the close of the preceding week and diminished slowly on Monday and Tuesday. A southeast wind of 34 miles per hour occurred on Tuesday at Eureka and a north wind of 36 miles per hour on Wednesday morning at the same place. At the close of the week the mornings were cloudy, but afternoons and nights clear.

* * *

SAN JOAQUIN VALLEY.

The weather was somewhat unsettled, but with much more sunshine than the previous week. The rains of the preceding week saturated the ground thoroughly and there is probably more water available and in sight than for many years past. The following report is given by the correspondent at Tulare:

"March has been a rain record-breaker in Tulare. On the afternoon of the 30th, the storm of rain, hail and thunder broke the record for this county. Clouds from the southwest, with heavy thunder, but no lightning, were seen coming for more than an hour before the storm broke. When it came the oldest inhabitant had never seen its equal here. Rain was followed by three days of cold northwest wind."

* * *

SOUTHERN CALIFORNIA.

The week was showery, with some unusually heavy thunderstorms on the 4th and 5th. Other portions of the week were clear, with moderate temperatures. An unusual feature was a thunderstorm at San Diego on the 4th which the observer says was the 6th thunderstorm in any April for 35 years. The prevailing winds were from the southwest. The correspondent at Poway reports a temperature of 37° on the morning of April 2nd. At Los Angeles a minimum temperature of 40° was reported. There was considerable interruption of rail travel during the week as well as during the preceding week. Heavy rains caused a number of washouts. The country roads are reported to be in bad condition from the late heavy rains. The week closed with clear, cold weather and drying northerly winds.

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Buy cheaper and better. We sell nothing—we pick bargains from all stocks. No charge for packing and expert services. *Write for information now.*

Western Supply House
434 South Hill St., Los Angeles, Cal.

The Produce Markets

Los Angeles Markets.

Los Angeles, April 12, 1906.

Butter remains unchanged, although shipments are coming in heavily now that the trains are running.

Vegetables are rather more plentiful, but are quickly taken by consumers, though warm weather will soon bring prices down.

Butter.

B. of T. Creamery, per roll	.50
Valley Creamery, fancy	.48
Valley Storage	.46@47

Cheese.

Cal. 3-lb. hand	.17½
Cal. Young America	.16½
California Anchor	.15½
Northern	.16@17
Domestic Swiss	.19@20
Imported do	.26½@27

Eggs.

Eggs, Fresh Ranch	.21

Poultry.

Fryers, 2 1-2 lbs	.18@19
Broilers, under 2 lbs., per lb.	.19@21
Young Roosters. per lb.,	.16@17
Hens. per lb.	.14
Ducks, per lb.	.14@15
Geese	.14@15
Turkeys	.19

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock:

Hogs, 200 lbs.	.6
Prime Steers	.4½
Cows	.3¼
Calves, per lb	.5
Sheep, ewes, per head	.4.50
Wethers	.5.00

Potatoes.

Northern. per sack	.1.60@1.70
Locals, per cwt	.1.10@1.25
Locals, new, per box	.1.50
Sweets, white, per cwt	.2.25
Sweets, yellow, cwt.	.2.00

Vegetables.

Onions, Aust. Brown, cwt.	.1.50
Onions, yellow, cwt.	.1.75
Garlic	.7@10
Cabbage, per sack	.1.00@1.35
Cauliflower, per doz	.60
Asparagus	.8@9
Lettuce, per dozen	.20@30
Bell Peppers	.18@20
Chili, Green	.20@25
Cucumbers. per doz	.60@1.23
Radishes, per doz	.15
Lima Beans	.10@15
String Beans	.8@10
Beets	.40
Green Onions, doz. bunches	.20@25
Carrots, doz. bunches	.25@35
Turnips, doz. bunches	.25
Celery, per doz	.45@50
Peas, per lb	.3@5
Oyster Plant	.40
Tomatoes, local	.1.00@1.50
Parsley, per doz. bunches	.75
Pie Pumpkin, per lb.	.01

Citrus Fruits.

Lemons, standard	.1.65@1.75
Lemons, choice	.1.50@1.60
Navels, extra fancy	.2.25@2.50
Navels, choice	.2.00@2.25
Grapefruit	.1.75@3.00

Fresh Fruits.

Pear, Winter Neils, per box	.4@6
Pears, Winter Nelis, per box	.5@6
Pippins	.1.90@2.00
Ganos	.2.25@2.75
Permains	.1.90@2.00
Dewberries	.35
Strawberries, per box	.10@18

Dried Fruit.

Apples, evaporated, ex, ch, 10; ch 9½.
Apricots, ex ch, 11; fy. 8½; ch, 7½.
Peaches, fy, 10½; ch, 9.
Santa Clara Prunes, 30-40, 8½, 40-50, 7½, 50-60, 7; 60-70, 6½.

Beans, Dried.

Limas	.5.00@5.50
Pinks, fancy	.2.40@2.50
Lady Washington	.3.00@3.10
Small White	.3.50@3.75
Black Eyes	.5.50@6.00

Honey.

Honey, comb frames	.12@13½
White, Strained, per lb	.6
Light Amber	.5
Amber	.4½
Beeswax	.27

Hay.

Barley, No. 1	.14.00@15.00
Alfalfa, local	.13.00@14.00
Alfalfa, Northern	.12.50
Wheat. No. 1	.16.00
Tame Oats	.18.00

Grain.

Selling prices of mill stuffs f. o. b. cars L. A., in quantity, are:

Rolled Barley	.1.40
Bran	.1.25
Feed Corn Meal	.1.45
Shorts	.1.45
Wheat, per cwt	.1.65
Cracked Corn	.1.40
Oil Cake Meal	.2.25
Cocoanut Meal	.1.55

San Francisco Markets.

San Francisco, April 11, 1906.

Butter.

Butter receipts have been liberal but prices hold firm at the scale of a week ago.

Fresh California extras	.20
Fresh California, firsts	.19
Fresh California, seconds	.18

Cheese.

California, new	.11½
California, firsts	.10½
California seconds	.11
Eastern Cheddars	.16
Storage, California	.14
Storage, eastern	.16

Eggs.

Eggs are higher and the demand is good.

Eggs, fresh (ranch)	19½
Firsts	.18
Storage, Eastern	.15

Poultry.

Old Roosters, per doz.	.4.50@5.50
Young Roosters, per doz.	.6.00@7.50
Hens, per doz.	.5.00@7.50
Ducks, per doz.	.5.00@7.00
Turkeys, per lb.	.15@17
Geese, per pair,	.2.00@2.50

Live Stock.

The only change in values of Live Stock offerings is a fractional decline in rates for Calves under increased receipts.

Hogs, per lb., 80 to 130 lbs.	.7
Hogs, per lb., to 250 lbs	.7¼
Hogs. pr lb., 250 to 350 lbs.	.6¾
Hogs, per lb., rough heavy	.5
Prime Steers, lb	.8½
Cows, per lb.	.6½
Calves, lb	.4½@5
Sheep, ewes, per lb.	.4½@5
Lambs, per lb	.5@7
Wethers, per lb.	.5@5½

Potatoes.

River Burbanks	.75@90
Oregon Burbanks	.90@1.25
Salinas Burbanks	.1.00@1.50
Sweets, Merced	.75@1.25
New Potatoes, per lb	.2@3

Vegetables.

Asparagus	.4@7
Rhubarb, per box	.65@85
Onions, Oregon, per sack	.85@1.15
Onions, Australian	.3.50
Bell Peppers, green	.25
Cucumbers, per doz.	.75@1.00
Tomatoes, per box	.90@1.25

String Beans	.15
Wax Beans	.12
Summer Squash, per box	1.25
Green Peas, per lb	3½@5

Citrus Fruits.

Navels, fancy	2.50@3.75
Seedlings	1.50@2.00
Lemons, standard	1.50@3.00
Grapefruit	1.50@3.50
Tangerines	1.50@2.00

Fresh Fruits.

Apples are in good demand with prices a trifle higher.

Apples, per box, extra	2.00@2.50
Apples, fancy	1.50@1.75

Beans, Dried.

Limas	4.60
Pinks	1.90@2.90
Small Whites	3.15@3.25
Black Eyes	4.40@4.50
Bayos	3.40@3.50
Red Kidney	3.50@3.75
Horse eBans	1.50@1.75

Hay.

Barley, new	$8.00@11.00
Alfalfa	10.50@11.50
Wheat	11.50@16.50
Oats	9.00@13.00

Grain.

Wheat	1.27@1.30
Barley	1.20@1.22
Corn, California, New Large	1.26
Oats	1.50@1.70
Rye	1.45@1.52
Rolled Barley, per ton	25.00@26.00
Bran, per ton,	19.50@20.50
Feed Corn Meal, per ton	28.00@30.50
Middlings ½	26@30
Cracked Corn, per ton	28.50
Oil Cake Meal, per ton	37.00
Cocoanut Cake, per ton	23.00

CITRUS MARKETS

So far ts the orange market in New York and other Eastern points is concerned, substantially everything is left to California now. There is a market for Floridas when they are desirable, but this late in the season there is quite likely to be more or less decay or shriveling, even though the fruit has been kept in cold storage all winter. The cold storage fruit is not as desirable for dealers, since it will not keep as well as that fresh from the trees, like the California shipments. At present, the market is entirely devoted to Californias, and sales become more and more active. Prices may fluctuate, but as a whole, demand and prices are both steady.

NEW YORK, April 10.—Twenty-five cars were sold at auction today. The market is lower. The weather is favorable.

NAVELS (Ventilated.)

	Averages.
Pointer, xc, A. C. G. Ex	$2.75
Stag, xf, A. C. G. Ex	2.90
Tiger, fy, S. B. Co. Frt Ex	2.80
Winner, fy, S. B. Co. Frt. Ex	2.90
Ruth, fy, Rubidoux Frt. Co	2.90
Orchard, or, National Orchard Co	3.30

THOMPSON IMPROVED NAVELS (Ventilated.)

Orchard, or, National Or. Co	$3.65
Standard	2.85

LEMONS (Ventilated.)

Corwin, fy, W. S. Corwin	$2.70
Corwin, ch, W. S. Corwin	2.25

NAVELS (Iced.)

Riverside, st, Riverside Ex	$2.60
Red Globe, xc, Riverside Ex	2.80
Square, or, Riverside Ex	2.90
Square, or, Riverside Ex	2.95
Blue Globe, xf, Riverside Ex	3.05
Our Pride, xf, Riverside Ex	3.10
Sweetheart, fy, Riverside Ex	3.25
Eagle, xc, Riverside Ex	2.75
Rebecca, xc, S. B. Co. Frt. Ex	2.80
Overland, xf, S. B. Co. Frt. Ex	3.20
Arroyo, st, Semi-Tropic Ex	2.80
Echo, ch, Semi-Tropic Ex	2.80
Quail, xc, O.-C. Ex	2.85
Bear, xf, O.-C. Ex	2.85
Pet, xc, San Antonio Ex	2.95
Pyramid, xc, G. R. Hand & Co	2.45
Santa Fe, st, Moffatt Frt. Co	2.45
Fountain, ch, Moffatt Frt. Co	2.70
Independent, xc, Highland	2.60
Independent, fy, Highland	3.20
Flower, ch, Upland District	2.65
Flower, fy, Upland District	2.80
Flower, fy, Upland District	2.85
Whittier, xc, W. F. Whittier	2.70
Whittier, xf, W. F. Whittier	3.30
Cosmos, xc, West Highland Citrus Association	2.75
Clover, xc, Redlands Or. Growers' Association	2.80
Mt. Harrison, fy, F. L. Sewell	3.05

THOMPSON IMPROVED NAVELS (Iced.)

Blue Globe, xf, Riverside Ex	$3.40

SEEDLINGS (Iced.)

Independent, fy, Highlands	$2.55

BLOODS (Whole Boxes, Iced.)

Pyramid, xc, G. R. Hand & Co	$2.50
Fountain, ch, Moffatt Frt. Co	2.70
Ocean, fy, Moffatt Frt. Co	3.00
Overland, xf, S. B. Co. Frt. Ex	2.80
Whittier, fy, W. F. Whittier	2.80

BLOODS (Half Boxes, Iced.)

Blue Globe, xf, Riverside Ex	$1.35

TANGERINES (Iced.)

Flower, fy, Upland District	$2.20
Bear, xf, O.-C. Ex. (1-4 boxes)	1.40

GRAPEFRUIT (Iced.)

Pyramid, xs, G. R. Hand & Co	$2.75
Quail, xc, O.-C. Ex	4.30
Independent, fy, Highland	4.35
Whittier, xf, W. F. Whittier	4.70

LEMONS (Iced.)

Corwin, fy, W. S. Corwin	$2.35
Plain End	2.20

Boston Market.

Twenty-six cars of oranges; two cars of lemons and one car of grapefruit were sold at yesterday's auction. The market is weak on large sizes. The weather is sold.

NAVELS (Ventilated.)

	Averages.
Stork, xc, San Antonio Ex	$2.40
Hawk, ch, San Antonio Ex	2.90
Quail, xc, O.-C. Ex	2.60
Bear, xf, O.-C. Exchange	2.60
Quail, xc, O.-C. Exchange	2.90
Bear, xf, O.-C. Exchange	3.00
Bear, xf, O.-C. Exchange	3.10
Royal, xc, Queen Colony Ex	2.85
Queen Bee, xf, Queen Col. Ex	3.10
Urchin, st, Seim-Tropic Ex	2.85
Urchin, st, Semi-Tropic Ex	2.80
Tunnel, ch, Semi-Tropic Ex	3.05
Tunnel, ch, Semi-Tropic Ex	3.10
San Fernando Rey, fy Semi-Trop. Exchange	3.15
San Fernando Rey, fy Semi-Trop. Exchange	3.25
Rialto, fy, C. C. L., Rialto	3.15
Winner, fy, R.-H. Ex	3.05
Swan, fy, R.-H. Ex	3.05
Arrowhead, xc, Highland O. G. A.	2.75
Pine Cone, xf, Highland O. G. A.	3.00
Atlas, xc, Redlands Eclipse Ass'n.	2.80
Redlands Beauties, xf, Redlands Eclipse Association	3.20
Tiger Head, xc, I. L. Lyon & Son	3.00
Lion Head, xf, I. L. Lyon & Son	3.25
Rose, xf, Redlands Orange Growers' Association	3.25
Aster	2.70

THOMPSON IMPROVED NAVELS (Ventilated.)

Cream, xf, Rialto Citrus Union	$2.40

NAVELS (Iced.)

Square, or, Riverside Ex	$3.10
Square, or, Riverside Ex	3.15
Whittier, ch, W. F. Whittier	3.00
Whittier, fy, W. F. Whittier	3.30
O. S. O	2.80
Cosmos, xc, West Highland Citrus Association	3.00
Paul Revere	2.85
Gabriella, fy, Independent Fruit Company	3.05
Pyramid, xc, G. R. Hand & Co	3.05
Tea Party	3.05
Clover, xc, Redlands Orange Growers' Association	3.05

LEMONS.

Just Right, ch, Queen Colony Ex.	$1.75
Southland Beauties, fy, Queen Colony Exchange	2.80
Leader, xc, Queen Colony Ex	2.15
Urchin, st, Semi-Tropic Ex	2.05
Tunnel, ch, Semi-Tropic Ex	2.15
Boley, ch	2.65
Boley, fy	2.85

BLOODS (Whole Boxes.)

Golden Rule, xc, Riverside Ex	2.55
Square, or, Riverside Ex	2.55
Rialto, fy, C. C. U., Rialto	3.25
Gondolier, xc, C. C. U., Rialto	3.05
Whittier, fy, W. F. Whittier	2.90

BLOODS (Half Boxes.)

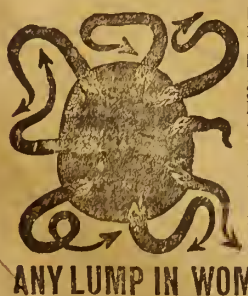
Rialto, fy, C. C. U., Rialto	$1.60
Gondolier, xc, C. C. U., Rialto	1.45
Square, or, Riverside Ex	1.40
Aster	1.30

TANGERINES

Quail, xc, O.-C. Exchange	$1.40
Bear, xf, O.-C. Exchange	1.95

SEEDLINGS.

Barton	$2.75



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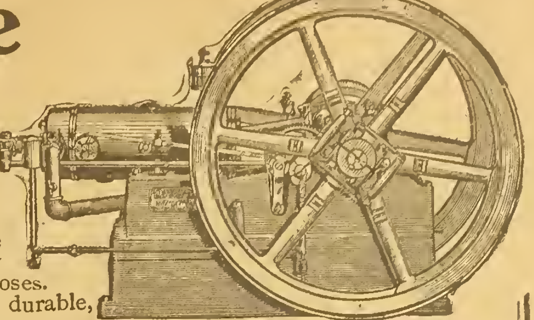

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They excel in **full, regular and long sustained power.**

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Call on local agent and examine these engines or write nearest general agency for illustrated catalog.

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The Usual low round trip rates to the east will be available this season from California and Nevada stations of the Salt Lake Route on account of various conventions as follows:

New Haven, Ct.—Knights of Columbus—Sell May 24, 25, 26—Return limit August 31. Rates will be announced later.

Denver. Colo.,—B. P. O. Elks—Sell July 17, 18, 19—Return limit Sept. 30. Rate $55.

Minneapolis, Minn.,—G. A. R.—Sell August 7, 8, and 9.—Return limit Oct. 31. Rate $70.

Milwaukee, Wis.,—Order of Eagles—Sell Aug. 7, 8, 9.—Return limit Oct. 31. Rate $74.50.

Also sell July 2 and 3—Return limit 90 days Sell August 7, 8, 9, and Sept. 8, 9 and 10—Return limit Oct. 31.

Chicago, Ill.,—72,50—St. Louis Missouri, $67.50.

St. Paul, Minn. $70.00—Minneapolis, Minn. $70.00.

Kansas City, Mo.,—$60.00—Omaha, Nebraska, $60.00.

Council Bluffs, Iowa, St. Joseph, Mo. $60.

Tickets will be sold going via Salt Lake Route and connections and returning via entirely different route, if desired. For full particulars as to stop off privileges, etc., application should be made to Salt Lake Route Agents.

The excellent train service and equipment of the Salt Lake Route and great variety of routes offered affords opportunity for an enjoyable trip. Inquiries from prospective travelers will receive prompt attention from Agents or T. C. Peck, A. G. P. A., Los Angeles.

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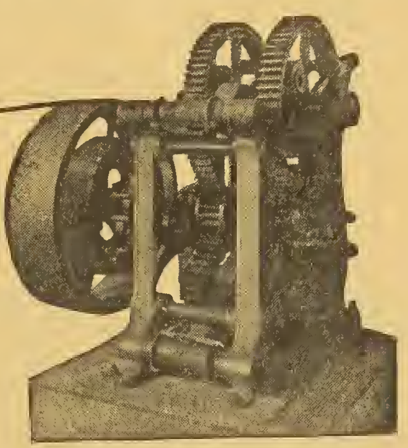

The Pomona Pump

The New Pomona Pump is now being manufactured with machine cut gears and machine cut steel or bronze pinions. The pump fitted with this kind of gearing runs as smooth as a clock and there is absolutely no noise or vibration. The company have recently taken contracts for installing their largest sized pump with this class of gearing for the Artesian Belt Water Company of San Dimas, Western Water & Power Company of Glendora and other large irrigation companies. They are required to furnish these pumps with cylinders up to 12 inches in diameter and 72 stroke which has capacity of over 60 Miner's inches of water. The valves are made entirely of phosphor bronze with ground metal taper seats so there is very little obstructiin to the water in passing through them and it is impossible to clog them with sand. These, in connection with machine cut gears, in the pump head, make a strictly high grade pumping outfit and the best by a long ways of anything on the market today.

This head and valves are both protected by United States patent. Beware of infringing as both manfacturer and user are liable.

The company has recently installed one of their latest improved heads for the Santa Anita Land Company, a subdivison of the Baldwin Ranch. Below is what the owners have to say about it:

"The new 38 pump you installed for us on our tract on the E. J. (Lucky) Baldwin Ranch is giving us satisfaction in every way. We think we have the very best that money will buy. Both as regards to pump, material used and installation. We made an excellent change when we removed the pump we had been using and installed your make"

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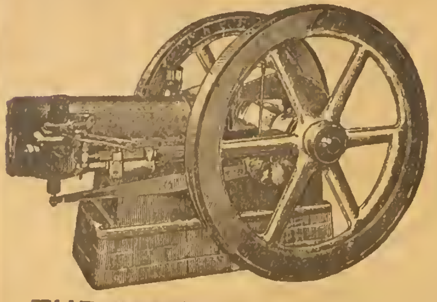

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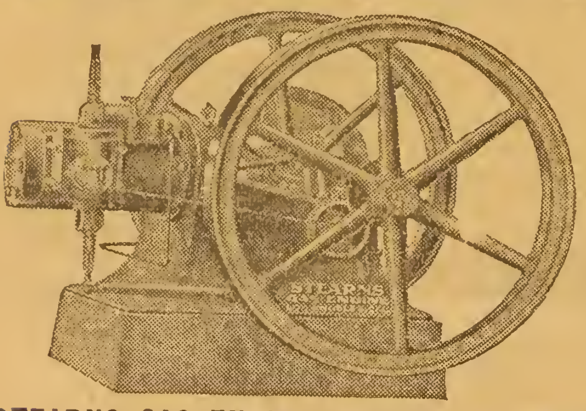

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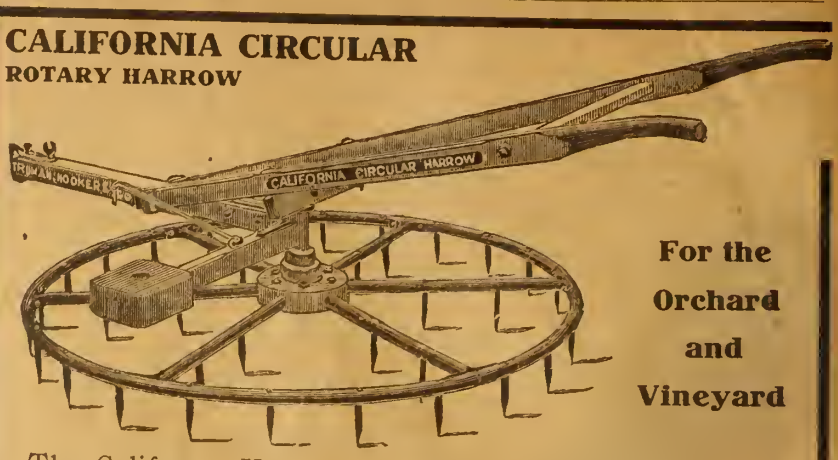

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The California Vineyard Harrow rotates either way at the will of the driver. Is a perfect PULVERIZER, LEVELER, CLOD-CRUSHER and WEED-KILLER. Cleans itself at every revolution. Write for prices.

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PORTABLE BUILDINGS

Made in all sizes and for all purposes. We show here the Oliver Portable Poultry House, 4 feet wide, 5 feet long, 3 foot wall. **Send for Catalogue,** which gives photographs, Prices and weights of other buildings

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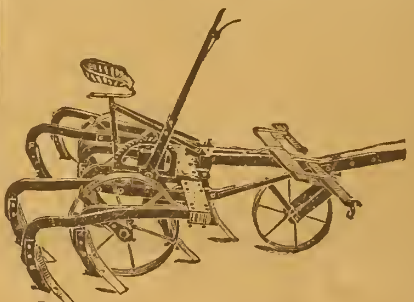

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The best known Cultivator for Orchard and Vineyard use. Send for Catalogue and prices.

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For General Machine Shop, Blacksmith and Foundry work and repairing our prices are always the lowest.

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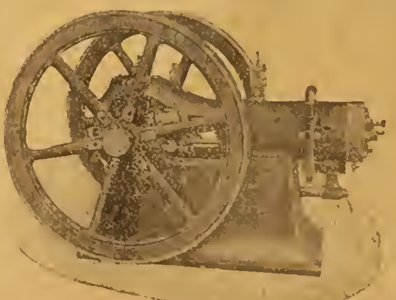

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Price Machinery is a good investment. Permanent installations always.

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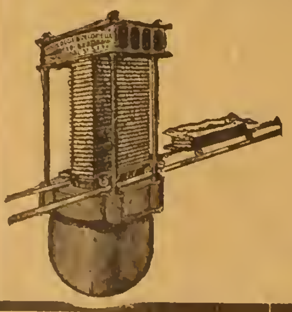

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Complete Plants Fitted Out.

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Catalogue Upon Application

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Ask for Ames California Cups they are made of the
MANUFACTURED BY A. T. AMES, GALT, CAL.
Best California Oak Tanned Leather. Every Cup Guaranteed

CALIFORNIA CULTIVATOR

DEVOTED TO AGRICULTURE IN ALL ITS BRANCHES

LOS ANGELES **APRIL 20, 1906** **SAN FRANCISCO**

COREOPSIS—CALIFORNIA SUNBEAMS.

This is another of the garden's great forces in yellow, strengthened with rich red-maroons and browns. Sow in the open ground in spring, and in thinning or transplanting give the plants plenty of room to spread. Their tall, slender habit makes neat staking and tying necessary. Are fine for cutting, flowers very large, in a variety of beautiful forms and various shades of yellow and brown.

WHITE MAMAN COCHET.

A most charming new and lovely rose of American origin; a sport from that grand rose, Maman Cochet; style of growth and flower identical with its parent; full, firm, long, large buds; the photograph shows a full blown flower, this variety is already being planted for cut flowers and as a garden sort it is going to to take front rank. Like its parent, both buds and flowers are of enormous size, produced on splendid stems and of the best quality for cutting.

Courtesy F. Gilman Taylor Seed Co.

WONDERFUL MAIL ORDER SPECIALS

95 Cents This Beautiful Shirt Waist is made of a good quality of white lawn, after the very latest model with large fancy double-thread Valenciennes Lace and Swiss Embroidery Yoke. We will furnish any size with either long or short sleeves. Compare this with any waist you haveever bought at twice what we ask and if this waist is not better value return to us and we will re fund your money,

$3.25 This Handsome Hat in a combination of allover lace and fancy chip braid with full trimmings of fancy mull, light weight silk, roses and foliage. The back is prettily decorated and the hat most attractive. The hat comes in white with pink or blue relief and also in black with colored flowers. Price....**$3.25**

$3.50 If you want a hat that is very stylish, but not too showy order this one. It is made of a new style fancy braid, with a crown of light weight silk shirred and gathered; the facing on the crown and in the back is of the same silk and then drawn over the back. It is fastened with attractive ornaments. A very stylish bunch of blossoms to complete it. You may order this hat in white, black, light blue, champagne, navy or brown. Price **$3.50**

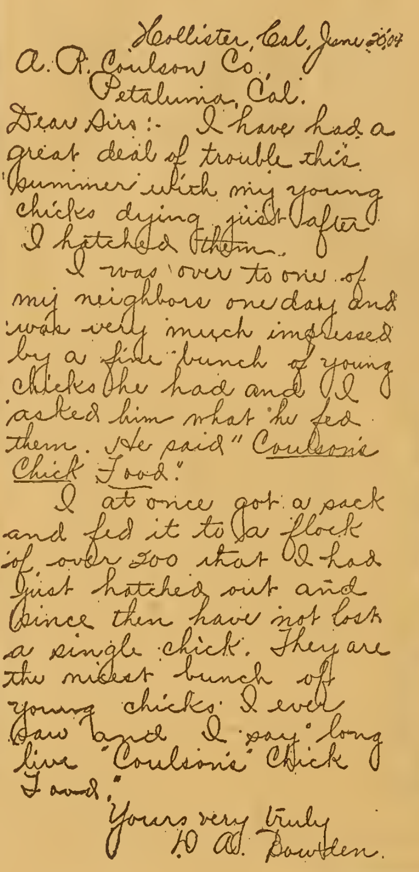
These are just a few of the wonderful bargains shown in our Spring Fashion Book, which WE SEND FREE

Breuner Brothers

"California's Greatest Mail Order House"
127 TO 133 BLUXOME STREET
426 TO 432 TOWNSEND STREET
SAN FRANCISCO. CALIFORNIA

When answering this advertisement please mention California Cultivator

Coulson's Growing Chick Food



Hollister, Cal, June 20, '04
A. R. Coulson Co.
Petaluma, Cal.
Dear Sirs:- I have had a great deal of trouble this summer with my young chicks dying just after I hatched them.
I was over to one of my neighbors one day and was very much impressed by a fine bunch of young chicks he had and I asked him what he fed them. He said "Coulson's Chick Food."
I at once got a sack and fed it to a flock of over 200 that I had just hatched out and since then have not lost a single chick. They are the nicest bunch of young chicks I ever saw and I say long live "Coulson's Chick Food."
Yours very truly
H. A. Bowden.

Puts your chicks ahead of all competition distanced. A complete and perfectly balanced ration for growing chicks, etc., ground grains, seeds, blood, bone and meat, etc., allcombined. It puts the flesh on them it's wonderful how it makes chicks grow.

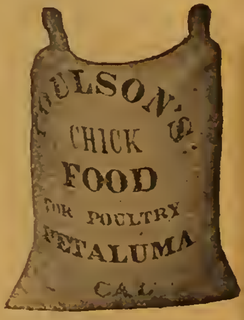
After the chicks get to be three or four weeks old, it will be essential to give them a meal once a day of Coulson's Growing Chick Food, and when they get to be six weeks old. feed them two meals of it a day.

The Growing Chick Food is of a different combination than the baby chick food. The Growing Chick Food is ground up more like meal. It is a stronger ration. containing more Fine Meat Meal and Dried Blood, etc., so it is more of a forcing food for the growing broilers—makes the chicks heavier and plumper and makes them develop rapidly.

Mix some of the growing chick food with milk or hot water, and manipulate it thoroughly and feed in a crumbly. not sloppy, condition. Another way is to take a panful of the Chick Food and bake it over night. Then the first thing in the morning crumble it up and give it to them.

Raised on Coulson's Chick Food. Showing One of the Colonies of Pullets, 3½ months old.

Plant of Armour Packing Company Where the Beef Meal is Made That is Used in Making Coulson's Chick Food.



Why You Should Use Coulson's Growing Chick Food

Common grain or chick foods, as a rule, contain too much fat-forming and not enough bone and muscle forming elements, and in consequence, the chick develops indigestion and diarrhoea, and soon dies.

If you will Feed Coulson's Growing Chick Food to the chicks they will be fully nourished, as this food is a complete properly balanced ration, all mixed, ready to feed.

Coulson's Chick Food is not very expensive. It is much cheaper to feed Coulson's Chick Food and raise big, strong chickens, than to feed by guess, a little of this and a little of that and not raise more than one-half of them. Remember Coulson's Chick Food contains everything required to fully nourish the chicks for the first two or three months.

All the trouble of hatching chicks is wasted if they don't live and grow.

If you like to see chicks dive into the feed as though they like it; you want to see the little chicks always spry and healthy; if you want them to grow rapidly and mature quickly;then you want to feed them the first three months on COULSON'S CHICK FOOD and you will be pleasedwith the way your little chicks are growing. It will raise the finest and largest chicks.

If you are going to raise any chicks this year, give it a trial.

It is composed of the best seeds and grains and PURE ANIMAL FOODS. A complete and perfectly balanced ration for growing chicks.

Coulson's Growing Chick Food analyzes about 18 per cent. protein. 60 per cent. carbo-hydrates. 7 per cent. minerals, 5 per cent. fat.

Coulson Poultry and Stock Food Co.

Petaluma, California

CALIFORNIA CULTIVATOR

Vol. XXVI—No. 16 LOS ANGELES, CAL., FRIDAY, APRIL 20, 1906 Subscription $1 a Year

Treatment for Grape Vines and Fruit Trees

Employment of Sulphate of Iron in the Treatment of Chlorosis and Anthracnose in Grape Vines and Fruit Trees

"Bordeaux mixture for the leaves, with sulphate of iron for the roots, is the combination for grape growers.—French works.

Chlorosis is a disease itself or the evidence of disease. The distinctive signs of chlorosis in grape vines and other plants consists in the stoppage of growth, twigs remaining thin, the leaves turning yellow and the plant becoming barren.

Gris in 1849 showed that chlorosis is due to lack of iron. In 1869 Sachs called attention to the necessity for iron in healthy plant growth.

The disease has been traced to too rapid growth, poorly aerated soil, excess of lime in the soil. There remains obscure causes for the disease.

Sulphate of iron is in most cases a sure cure for the disease, and the consumption of this material in Europe has reached enormous quantities.

Rassiguier discovered a simple and practical method of combating the disease, which may be best given in his own words:

"The treatment with sulphate of iron, as an antidote to chlorosis, which I invented in 1891 and tried on my own property. has furnished such results that the method has spread and experience has taught its value to both scientists and practical wine growers.

"For the benefit of those who are still unacquainted with the details of the matter, I will briefly review the conditions to be followed as to the time, method of operating and quantity of dressing to apply, and recount the influence of a single annual washing on chlorosis. anthracnose and "short node" on vines, fruit trees and roses.

"To produce the full effect, washing should be performed in autumn. the vines most afflicted with chlorosis being treated first, as soon as the first leaves begin to fall; in fact, I think that such as are very much stunted should be treated before any of the leaves come off. Both are washed immediately after each stock has been pruned.

"All the wounds made in pruning should, without exception, be drenched with the iron solution and, in order to ensure the curing of the disease, the drenching should extend over the whole surface of the trimmed shoots (not excepting the buds, these being sufficiently protected by their downy envelope), the branches. and even the stem, as will be explained below.

"There is no need to be afraid of a more or less deep coloration of the trimmed shoots, and if any of these—insufficiently ripened, and therefore liable to perish—should succumb to the washing process. their place will shortly afterwards be found taken by vigorous buds—beside or below the dead shoots—which will bear fruit the next year. All vines, well or diseased. may be washed with advantage, as the treatment strengthens growth.

"If postponed until cold weather sets in the washing will have little effect, and spring washing is less efficacious against chlorosis than autumn washing.

"An active laborer with a wooden pail and a brush or, better still, a woolen rag tied up in the shape of a brush, can wash after three pruners. The solution should be a saturated one, i. e. containing 40 to 45 per cent of sulphate of iron, and may be prepared in a very simple manner by placing 80 to 90 pounds of sulphate of iron in a wicket basket or jute bag slung on a stick and suspending in a vessel large enough to hold 200 gallons of water without overflowing when the basket is immersed. After leaving overnight the sulphate will be dissolved and the liquor ready for use the next day.

"Generally the results of the treatment are remarkably beneficial, and in many places a complete cure is effected the first year. However, some soils are less favorable to viticulture and require the treatment to be repeated. Chlorosis has also been cured in fruit and rose trees by washing the pruned surfaces with the same solution.

"Moreover, when the dressing is applied over the entire surface of the stock, it is capable of destroying the germs of oidium, anthracnose, mildew and insects lodged in the interstices of the bark.

"Three years' consecutive treatment of my own vines cured the short node, i. e., those where the nodes on the stock branches were only a few centimeters apart. These formerly unproductive stocks now yield a large crop, and the internodes are of ordinary length.

"First year's grafts may be treated with a 20 to 30 per cent solution. the full dose being repeated the third or fourth year.

"Thus all the foregoing maladies are curable by a single annual operation.

"I recommend the pruner to cut through the middle of the bud just above the one destined to bear fruit, so as to leave intact the protecting septum existing at this point, and which, when cauterized at the surface by the action of the sulphate of iron, preserves the adjacent internode from the effects of frost, insects or wet, which might otherwise penetrate the pith; this internode remaining healthy, the fruit bud will be rendered more vigorous."

Anthracnose or birds' eye rot of the grape.—This fungus disease and its cure is so well described by Prof. O. M. Morris in Bulletin No. 64 (Jan.. 1905), of the Oakland Agricultural Experiment Station, that we quote the article entire:

"This disease is scattered over a large portion of the territory and is doing a great deal of damage. It is one of the worst of plant diseases, as it attacks the fruit and all green portions of the plant and is very difficult to handle. Most of the methods of treatment prove unsatisfactory. The first appearance of this trouble should be vigorously met and all possible care taken to prevent its spread.

"This disease may appear at any time during the growing season. It commonly appears on the shoots soon after growth starts in the spring. Its presence on the shoots is first indicated by the darkening and sinking of the bark in small oval or oblong spots extending lengthwise of the shoots. If the disease is abundant the shoots soon have a speckled appearance. These spots usually enlarge, the greater portion remaining black with a more or less distinct line of purple around the edge. After a time the center turns gray and forms a scab; this is the fruiting of the disease. Limbs badly affected are severly checked in growth or killed. The leaves are attacked and on the stem and vines show the same marks as on the shoots, but on the blade of the leaf the spots turn brown. The stems of the clusters are also attacked, and where the spots girdle a stem the fruit does not ripen but remains green and withers.

"The disease usually appears on the berries when they are about half grown. The diseased portion is brown with the characteristic red or purple margin and round in outline. The discolored part is sunken and later turns to a lighter or gray color, which is caused by the fruiting portion of the fungus rupturing the skin and forming a scab. Some varieties are more susceptible to the disease than others. Among those most susceptible to its attacks are Goethe, Agawam, Vergennes and Diamond.

"Treatment should begin early, before the buds open in the spring. The following solution is very good to apply as a wash before the growth starts in the spring:

"Sulphate of iron, 70 lbs.

"Sulphuric acid, 1 pint.

"Warm water, 16 gallons.

"The acid should be poured over the sulphate of iron crystals and then the water added. This. if well applied, will kill all of the spores that have lodged in the vines over winter. When this solution is used the vines turn black, and any part of the vine that has not turned black within a day or two after the first application should be washed again. Bordeaux mixture is of value in holding the disease in check on the growing vines."

Experiments on replacing in fertilizers "super-phosphate" with "mineral phosphate" plus sulphate of iron:

The experiments were made in a French wine vineyard by M. Bisset. The fields previously had received a dressing of horse manure. Beginning in April, 267 lbs. per acre of the following six fertilizers were used on the different experimental plots. and with the following results:

"Superphosphate" Fertilizers.

Composition.	Yield of wine per acre in gallons.
110 ℔ superphosphate 20%; 110 ℔ nitrate of soda...	961.9
81.4 ℔ superphosphate 20%. 55.0 ℔ nitrate of potash, 41.8 ℔ nitrate of soda, 41.8 ℔ sulphate of potash	961.9
79.2 ℔ superphosphate 20%, 70.4 ℔ nitrate of potash, 70.4 ℔ sulphate of potash	908.5
	2832. gals.

"Mineral Phosphate" Fertilizers.

132 ℔ mineral phosphate 17%, 110 ℔ nitrate of potash, 22 ℔ sulphate of iron	1389.4
96.8 ℔ mineral phosphate 17%, 55.0 ℔ nitrate of potash, 41.8 ℔ nitrate of soda, 41.8 ℔ sulphate of potash, 22 ℔ sulphate of iron	138.
94.6 ℔ mineral phosphate 17%, 72.6 ℔ nitrate of potash. 70.4 ℔ sulphate of potash. 22 ℔ sulphate of iron	940.5
	3719.3 gals.

The Comice Agricole de Libourne (France), experimented with a plot of vines using the following fertilizer:

Dried blood....................	89.2
Superphosphate	223.0
Sulphate of Potash..............	223.0
Sulphate of iron................	44.6
per acre	579.8

The fertilized plot produced 142.8 gallons against 121.6 gallons from the unfertilized plot, an increase of 21.2 gallons.

The "Journal de la Vigne " (France) cites the above formula as being used in Gironde for rich deep soils, while for poor soils the following fertilizer is used:

Dried blood	428.3
Superphosphate	374.7
Chloride potash	107.0
Organic matter................	53.5
Sulphate of iron...............	160.5
per acre	1124.0

M. Andourd, Director Agricole Station Loire Inferieure. gives in the Bulletin du Syndicat des Agriculteurs del, Inde the following formula for a grape vine fertilizer:

Rock phosphate 15%....	446.1	
Sulphate of ammonia....	89.2	
Sulphate of potash......	133.8	
Plaster	446.1	
Sulphate of iron.........	178.4	356.8
Per acre	1293.6	1472.0

Deciduous Fruit Culture

BY J. W. MILLS, POMONA, CAL.

BEST WATERMELON FOR HOME GARDEN

Editor, Cultivator:—Kindly tell me through the columns of your valuable paper a good variety of watermelon for the home garden and how to grow same.—R. T., San Francisco.

The Augusta Round White melon is considered the best for the home garden. It is too tender for shipping. Next to this we would plant the Chilian. It is dark mottled green with blood red flesh and is a good market melon. Perhaps the best.

A sandy loam produces the best watermelons. Plow it early and let it take in all the spring rain. Keep it well cultivated up to planting time which should not be earlier than the middle of May. Keep well hoed and cultivated till the vines interfere.

* * *

TO OBTAIN LAND IN IMPERIAL VALLEY.

Editor Cultivator:—Will you kindly tell me the terms they sell land on in the Imperial Valley? Does the water go with the land and is the title good?—T. J. B., Forestville.

The only way you can get land in the Imperial Valley is to buy water stock, the land is thrown in. If you file on Government land, it will cost you $1.25 an acre, but you must have water stock for it before you can prove up on it. Your water stock will cost you different prices. Farmers have improved their land and in some cases ask a higher price for it than does the California Development Company. There are perhaps some tracts of land which will sell with its water stock for less than it cost. but usually such land is dear at any price. Titles are good as the land was opened up under the desert land act.

The Imperial Valley is a vast country, and the only way for a prospective buyer to do is to go there and stay long enough to find out the advantages and disadvantages of the different tracts of land.

* * *

BEST WALNUT FOR MICA SAND

Editor Cultivator:—What is the best kind of walnut to plant on N. P. mica sand, 75 feet to water? Walnuts and fruit do well. but late frosts are bad there. How to select the seed is what I want to know. What kinds of peaches, prunes, apples and cherries are the best.

The best walnut for your situation is Franquette. It is a very late bloomer, and perhaps the finest type of nut grown. It, however, is not as prolific as some of the other varieties, but it will not be caught with the frost as often as other kinds. It will bring better prices than the Santa Barbara Soft Shell.

We cannot recommend a list of fruit trees for such land, but suggest that you try Salway, Lovell and Belle of Georgia peaches. Red Astrachan, White Winter Pearmain and Missouri Pippin and Bellefleur apples. We do not think you can raise cherries there, but would suggest you try a few Rockport Bigerreau. The common French prune, either D'Ente or Robe de Sargent. For home use, fresh. a couple of trees of Tragedy prunes are very fine.

* * *

APPLES IN CALIFORNIA.

Some years ago Mr. C. H. Rogers, an authority in California on the apple, stated in a paper before the State Fruit Growers' convention that the apple was adapting itself to the widest range of latitude and condition. but that it required certain surroundings to attain its highest degree of perfection. His observations had convinced him that the apple required a deep rich soil and a cool climate. Such conditions, he says, are found mainly near the coast and in the mountains of California.

The climate of a certain belt of the whole western slope of the Sierras is particularly adapted to the growth of the Baldwin, Spitzenburg, Hoover, Ben Davis, Winesap, and Greening. This belt, he says, varies somewhat, according to latitude. In the north, it might be given as ranging from 1500 to 3500 feet above sea level and gradually increases in altitude as the south is approached, until 2000 to 4000 feet about reaches the limit, while at the extreme southern limit of the State the latitude should be between 2000 and 4000 feet. The favorite varieties in the last named section are Duchess, Jonathan, Greening and Bellefleur.

In the coast counties some of the finest apple orchards are located within a short distance of the ocean and at an elevation of but a few feet, and while along the coast choicest red varieties may be raised, such as Spitzenburg, Jonathan and others, they may be raised as high as 3500 feet elevation. On account of climate variations the limit at which any variety may be depended upon to yield a full crop yearly is about 2000 feet above sea level. the yellow varieties, such as Newtown Pippin, Bellefleur and White Winter Permain are not profitably grown above 300 to 500 feet above sea level because of the prevalence of apple scab and other fungus.

The climate of the hot valleys does not prove conducive to the best results with the winter varieties. For these reasons, the commercial orchards have been confined to the more favored localities where late varieties flourish best. The leading apple district in California is Pajaro Valley, two-thirds of which is located in Santa Cruz County and the balance in Monterey County. This valley produces for export more apples than all the rest of the State combined, or fully 90 per cent of the outside shipments. It opens out upon the ocean. insuring coolness of climate and an annual rainfall averaging over 20 inches together with the water table ranging from 10 to 20 feet below the surface, insuring sufficient soil moisture, a soil of great depth and unusual fertility.

FRUIT IN SOUTH AMERICA.

A recent bulletin gives an account of the climatic and soil conditions of Argentina, and the production. culture, and export of fruit.

From recent statistics it appears that there are about 200,000 acres planted with fruit trees and 120.000 acres planted with vines. Of the different fruits grown, exclusive of grapes, peaches constitute 40 per cent. citrus fruits 20 per cent., figs and apples 10 per cent. each, pears, quinces, and plums, 5 per cent. each, cherries and all other kinds of fruits. including nuts. 5 per cent. It is thus seen that the peach is the principal fruit of the country. Plums also do especially well, but apple and pears are of minor importance.

The supervisors of the Oroville district are preparing to make a new county road to include the fine road that has been under construction by the Western Pacific up the Feather River canyon for several months. The road will be forty miles long and will have an easy and uniform grade and good bridges. It is built along the steep walls of the canyon and will cost in the neighborhood of $500,000, which the Western Pacific will pay.

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AND
NITRATE OF SODA
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TRUE STOCK A QUALITY
Fruits and Roses
Illustrated and descriptive catalogue of California fruits and roses. Valuable to everyone improving their home grounds or planting commercial orchards. A copy is yours for a two-cent stamp to pay postage.
ARMSTRONG NURSERIES
Box 1114, Ontario, Cal.

Of Interest to **Fruit Growers**
Sometimes it pays to take the first market. Sometimes it pays to wait until your fruit is dried. I will furnish free to all producers of Dried Fruits a compilation of the stocks of Dried Fruit in all the largest cities in Europe and the United States. After seeing this report you will know when to sell and at what price. My estimates were correct in 1904, when prunes sold at 1 3-8 bag basis. I estimate apricot and peach prices. Contracts made by or through me will be safe. I never have had a draft rejected or unpaid. Reference: American National Bank, and Bank of California, San Francisco.
F. W. Dieckmann
214 California St. San Francisco, Cal.

Plant Loganberries
For profit. We are prepared to purchase the fruit and, in fact, all kinds of small fruits, even if too ripe for other uses. If you have
Culled or Unmarketable Oranges and Lemons
it will be to your best interests not to sell to peddlers, but to dispose of such fruit to the
Sherman Concentrated Fruit Co.
427 N. Anderson St., Los Angeles, Cal.

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TRADE MARK REGISTERED
Imported Sublimed and Powdered
SULPHUR
Absolutely Pure No Residue
Best Sulphur for Bleaching and Spraying Fruits & Vines
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218 California St. San Francisco

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Orange County Nurseries
Choice line of Orange Trees, consisting of Valencia Late, Wash. Navel, Navelencia, King Tangerine. Eureka Lemon, Budded Loquat, Blue Gums, Red and Sugar Gums, large stock Soft Shell Walnut trees 3 years old, Grafted Walnuts, Palms, Shrubbery, and general line of deciduous fruit trees. Write for price list.
Est. 1889. SANTA ANA, CAL.

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SUBLIMED "Volcano Brand" "Tiger Brand" **Sulphur** "Anchor Brand" Velvet Flowers of *SULPHUR*
Roll, Virgin Rock, Refined, Powdered and Crude . . . .
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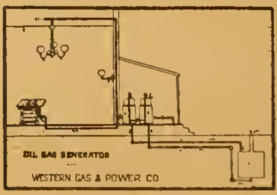
14 and 16 Sansome St. San Francisco.
Phone Drumm 87.

Apple Trees
5 to 7 feet, one year old, $20 per 100. Grown in Riverside. Clean and healthy. ***Cornichon Grape Vines,*** $25.00 per 1000.
Jurupa Nurseries, Riverside, Cal.



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For Lighting, Heating, and Cooking.
A beautiful 35 c. p. light for 5 hours for 1 cent. Twice as cheap as acetylene for lighting. Seven times as cheap for cooking. Absolutely safe. easily installed. guaranteed. No odor. no smoke,—does not clog burners. Automatic in every way. No winding. no pumping. Write today for "red" catalogue to
WESTERN GAS & POWER CO.
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Practical Farm Science

SOIL INOCULATION.

In Bulletin 68 of the Oklahoma Station is recorded the results of a series of pot experiments with sterilized soil to study (1) effect of cultivation and composition of media on the activity of the germ from the alfalfa plant; (2) nature of the organisms from the cowpea and the soy bean, and of a commercial culture; (3) cross inoculation, or the inoculation of one plant with cultures obtained from another; (4) normal distribution of the tubercle-forming bacteria of the legumes in the United States; (5) ability of the tubercle-forming bacteria to increase the nitrogen content of culture media in which they are grown; (6) methods of sending out cultures; (7) cultural characters of the tubercle-forming bacteria of the legumes.

Methods of determining nitrogen in the cultures and the results obtained in a series of analyses are also given, as well as the cultural characteristics of the tubercle-forming bacterium (Pseudomonas radiciola) of legumes. The results obtained are believed to justify the following conclusions:

"(1) Soil inoculation with cultures of the tubercle-forming bacteria is practicable only when other conditions are favorable for plant growth.

"(2) It is possible to grow these bacteria for at least thirty to thirty-five generations on special media without materially lessening their activity.

"(3) Some cultures examined in the laboratory purporting to be cultures from the alfalfa plant do not contain the germ from the alfalfa plant at all, but are cultures of a soil organism resembling the germ from alfalfa in some particulars.

"(4) The tubercle-forming bacteria of the legumes are easily destroyed by light. consequently inoculated seed should be kept in the dark until used.

"(5) Some of the ordinary soil bacteria form colonies very similar to those of the tubercle-forming bacteria and also resemble them to a certain extent in being vacuolated. every culture, from which subcultures are to be made for distribution, should be tested in pot experiments."

FERTILIZERS FOR ASPARAGUS.

Salt was long considered an essential fertilizer for asparagus. The natural habitat of asparagus is the seashore. and it was reasoned, therefore, that salt was beneficial to this crop. In modern commercial practices, however, beds of asparagus have been found to yield as well without salt as with it. and this has raised the question whether the use of salt is to be considered essential in the culture of asparagus.

E. Walker has recently made an experiment to determine the value of salt in asparagus culture. One-half of a bed containing one-seventh of an acre was fertilized with salt at the rate of 1000 pounds per acre. The asparagus field was in its second year at the time the experiment was started. As far as could be seen there was no appreciable effect of the salt upon the growth of the asparagus nor in preventing the growth of weeds. The following spring that portion of the field which had received salt the preceding summer was again salted, and this time at the rate of 2 pounds per square yard. The salt was applied in two equal portions at intervals of 20 days. With each variety of asparagus larger stalks and an increased yield was secured where the salt was applied, the average increase being 13.5 per cent in favor of the salted area. Not only was the growth of the stalks increased in the spring. but there was also an increased vigor in the plants throughout the summer and a notably increased glaucous appearance in the salted plants. The salt was entirely effective in preventing the growth of weeds. On the salted area without any hoeing but a few weeds appeared, and those late in the season. This beneficial action was believed to have been beyond what might have been assigned to the salt in simply preventing weed growth. ts indicate that while in the field culture of asparagus salt may not be especially useful, in the small garden patch, where intensive culture is practiced and where large amounts of stable manure are applied each year it may answer a very useful purpose. especially in keeping down weeds.

There has been some question as to whether or not early spring applications of fertilizers will affect the yield of merchantable shoots the same season. As is well known, the food supply of the first shoots to appear in spring is largely derived from food stored in the roots the preceding season. C. P. Close reports the results of an experiment in which the value of spring applications of nitrate of soda were studied. In the experiment a half acre of asparagus was fertilized with 100 pounds of nitrate of soda, which was applied in four equal portions, at intervals of about 10 days. The first application was made about 10 days or two weeks before the cutting season began. Another half acre was left unfertilized for comparison. The yield of stalks from the fertilized plat was 460 pounds and from the unfertilized plat 448 pounds. a difference of only 12 pounds in favor of the fertilized plat. This slight difference might or might not have been due to the use of the fertilizer, but "even admitting that the gain of 12 pounds is due to the 100 pounds of nitrate of soda used, it is not enough gain to justify the use of the fertilizer. The station concludes that " the use of nitrate of soda on asparagus beds during cutting season can not be recommended." On limited soil nitrate of soda has proved nearly twice as valuable a fertilizer for this crop as sulphate of amonia.

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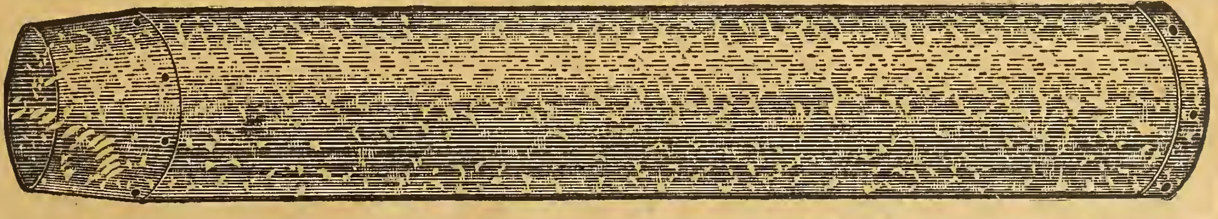

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California Horticulturally

BY JOHN ISAAC, SACRAMENTO, CAL.

SAN JOSE SCALE IN THE EAST.

California has received from the East very many serious insect pests, but she certainly got even for all this by sending the San Jose scale in return. We remember some 25 years ago what a serious afflictions this insect was to our orchardists, and for a time it looked as though the fruit industry in our State would be ruined by it. Every possible endeavor was made to circumvent its action and to discover some way of checking its spread, and out of this came the salt, sulphur and lime wash, which is still one of our standard remedies. After a time it was discovered that the pest was disappearing, even in locations where no efforts had been made to check it, and investigation showed that this work was being done by a little internal parasite, which has now so nearly overtaken the scale that we no longer look upon it as a serious pest, for while there are occasional outbreaks of it in limited areas, it soon disappears before its little foe. Of late years the San Jose scale has got a foothold in the orchards of the East, and it has spread over enormous tracts, destroying everything in its track, and no efforts seem competent to check it. Trees by thousands have been dug up and destroyed in the hope of staying its progress, but without avail, and every year complaints are made of its terrible destruction and its appearance in new districts. The same parasite which has done such good work for us in California exists also in the East, but owing to the shortness of the season there it has fewer broods than here and hence has not yet increased in sufficient quantity to overtake the scale, which seems to keep well ahead of it. Efforts have been made by the Department of Agriculture to introduce a predaceous lady-bird which should prey upon it, and while good reports have been made of its work, it has not yet proven efficient as a check. In the meantime the San Jose scale is with our Eastern friends what it was with us a quarter of a century ago, a difficult and costly problem, and emphasizes the fact that it is cheaper to keep out pests than to get rid of them when they once get a foothold.

STIMULANTS FOR SEEDS.

The possibility of stimulating the germination, especially of old seeds, and promoting the growth of plants by treating the seeds before planting with various substances, has been the subject of a number of studies both abroad and in this country, which have yielded results that promise to be of practical value. It has been repeatedly observed that certain of the treatments used in prevention of smut (for example, use hot water and copper sulphate) appearently stimulates germination and growth and result in a greater increase in yield than can be accounted for simply by the influence of the treatment in preventing disease. G. E. Stone and associates, of the Massachusetts Experimental Station, have shown that such results may be obtained by means of treatment with a variety of chemical solutions as well as by electrical stimulation of the seed. Of the experiments conducted in this country those made by F. A. Waugh, of the Vermont Experiment Station, and later repeated at the Massachusetts Experiment Station, have given results which promise to be of most practical value. Professor Waugh's experiments, which were begun as long ago as 1896, were based upon the assumption that the transformation of the starch in the seed is an essential process in germination, and that the so-called enzyms, such as diastase, which are especially active in bringing about such transformation, would probably aid germination when used in the treatment of the seed. He therefore soaked old and fresh seeds of different kinds in solutions of diastase and similar substances before planting. He found in general that the percentage of germination and the vigor of the young plantlets were increased by such treatment, diastase, either from malt or from various commercial preparations, being especially active in this respect. He found that tomato seeds responded especially well to the action of the diastase.

In his more recent experiments, Professor Waugh treated tomato seeds of different ages not only with diastase but with malt extract and with beer, which contain a certain amount of diastase. He found that the germination of old seeds was greatly promoted, and the vigor of the plants was increased 600 per cent by the diastase treatment. Similar results, though less marked, were obtained with fresh seeds. In all cases the plants were more vigorous, and apparently more resistant to disease (damping off). The results in general indicate that this method of treatment may be profitably employed if a cheaper source of diastase than that now available can be secured.

The results obtained in these expriments confirm those by Jensen in experiments made in Sweden with oats and barley. He found that treatment of the seed grain with a weak extract of malt gave an increase in the yield obtained at harvest time in comparison with seed treated with water only, showing that the extract produced an increased vegetative energy.

Several results are reported by Breal and Giustininani, of France, with, however, a very different method of treatment, as follows: The seeds were placed in a solution containing from one to five parts per thousand of copper sulphate, in which was stirred while boiling 2 to 3 per cent of starch. After cooling the mixture, four to five times its weight of seed was placed in it, thoroughly mixed, and allowed to remain for twenty hours, after which the seed was dusted with lime and spread to dry. This method of treatment increased the yield of all the crops experimented with, including corn, wheat, barley, oats, lupines, and buckwheat.

These various experiments encourage the hope that some of these methods may eventually be profitably applied in practice in certain cases, especially in the stimulation of old seeds and others of low vitality. Many important details, however, remain to be worked out before any of the methods proposed can be recommended for general or extended use.

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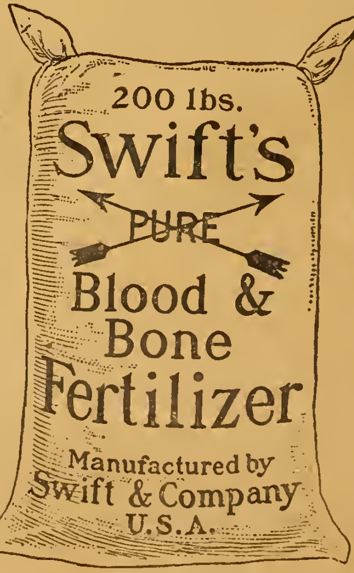

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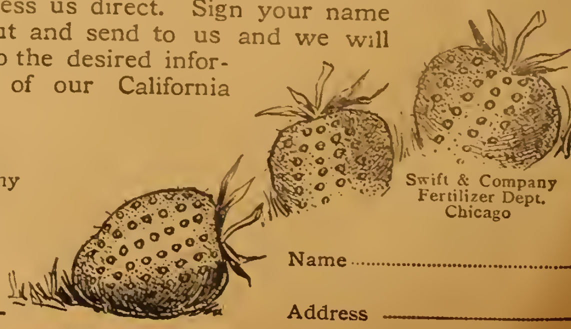

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With the Citrus Growers

BY J. W. MILLS

BUDDING.

The seedling orchard is doomed, except under peculiar circumstances and conditions, as the fruit can not be laid down on the Eastern seaboard in competition with foreign fruit, and the Middle Western States is the only place where a market can be looked for, and other varieties of budded fruits are somewhat taking the place of the seedling. Nevertheless, a good seedling at its best is the equal in quality of any other variety, not excepting the matchless Navel. April is one of the best months for budding and changing over the choice kinds.

Whether the Navel can be grown with profit and success outside of the Pacific Coast remains to be proven, and it may be that our climate has something peculiar about it that makes such a luscious fruit from blossoms so imperfect that they will not produce seed.

ABOUT BUDS.

In changing very old trees it is most important that the right kind of buds be obtained, as much of the success can be attributed to the character of the bud. In budding on young wood almost any kind of a bud will take and do well, but where the bark to be budded is several years old, a small bud will be completely buried and have hard work to make a start, therefore, for this class of work, buds from vigorous suckers are generally chosen, and such may be depended on to set and commence to grow. It has been generally held by budders that when once a bud has started on the sucker it is useless to try to insert it and expect it to grow, but our best budders now assert that this is no hindrance but rather the reverse, as it shows an active bud ready for work and full of resources as one start does not by any means exhaust the possibilities of the bud. In Florida where the conditions may be more favorable, it is said to be not at all uncommon in budding old trees to take a young shoot in place of a bud, which, being at the time active, is so far on the way to success.

MOVING ORANGE TREES.

Although in the early days of planting orange trees all were moved with naked roots and had often to be carried fifty or a hundred miles in the hot sun and dry atmosphere by wagon, as it was before the days of railroads, success generally crowned the efforts of the planter. Perhaps one reason of this was that plantings at that time were small, holdings being counted by the trees rather than by the acreage. The Wolfskill orchard, where now the Arcade depot in Los Angeles is located, consisted of 2000 trees and was noted far and wide for its size and the immense profits realized from the fruit. Then oranges were counted by the number of the fruit in place of the box or carload, and the only market was on the Pacific Coast by water carriage. But this is a digression.

Although success generally follows the efforts of the careful man who moves his trees with naked roots, it will be found that with naked roots the earlier in the season they can be moved the better will be the results. Balling for short distances and sacking for long distances is the safest way and the expense is but a trifle more than the old method.

FERTILIZER TERMS.

Nitrogen—A constituent of the air and the principal fertilizing element in cotton seed meal, nitrate of soda and stable manure.

Ammonia—A compound of nitrogen and hydrogen in the proportion of 14 parts nitrogen to 3 parts hydrogen. Fertilizer analyses usually give the percentage of nitrogen and its equivalent in ammonia.

Nitrate of Soda—A mineral product obtained in Chili, South America. It is very quick in its action on the growth of plants. As its name indicates it is a combination of nitrogen and soda.

Sulphate of Ammonia—A combination of sulphur and ammonia and much used as a fertilizer.

Nitrogenous—Pertaining to or containing nitrogen.

Nitrogen is the element which peas, beans, clovers, vetches, etc., gather from the air.

HAWAIIAN ORANGES.

Over two thousand boxes, containing one hundred and thirteen thousand oranges, went up in smoke from the classic Iwilei district yesterday. The fire department was not called out, and no attempt was made to save any of the oranges. In fact, Mr. Alexander Craw, Superintendent of the Division of Entomology and Chief Inspector under the Board of Agriculture and Forestry, caused the oranges to be annointed with two cases of kerosene oil and himself lighted the fire which nipped in the bud the attempt of certain Japanese importers to defy the law which prohibits the importation of fruit infected with injurious scales, blights and insects.

As soon as the injunction was issued last Friday, prohibiting the importers and Deputy Sheriff Kalakiela from interferring with the Board of Agriculture in the discharge of its duties, Professor Craw and his assistant, Jacob Kotinsky, began a close inspection of the fruit.

They found ninety-nine per cent. of the oranges to be infected by thirteen varieties of dangerous scales. blights and insects, ONE A SPECIES OF LEAF HOPPER. and condemned the whole lot. Later the oranges were all carted to the Iwilei rubbish dump and there burned under Mr. Craw's supervision.—Honolulu Press.

ARE YOU READY FOR HARVEST?

There is a dignity about the International Harvesting Company advertising we are running which is befitting the subject. "Mother Nature has done her part. The fields are ripe. Are you ready for the harvest?" That is the dignified way the great Harvester Company introduces to our readers its excellent machines Champion, Deering, McCormick, Milwaukee, Osborne and Plano, which aid in the harvesting of so large a part of the grain and hay raised in America.

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No word of ours could add to the reputation of the International Harvester machines. No word is needed. It is enough to say that no mistakes can possibly be made by purchasing any one of the six machines named. But the warning to get ready for the harvest is timely. International agencies are established at every considerable trading point to facilitate distribution and furnish supplies and repairs These agencies have catalogues and descriptive matter on the long line of harvesting machines and the company builds in addition to the mowers and binders. Farmers should call, procure the catalogues, make a study, of them and determine in time on the machines they will buy. Profitable farming demands improved machinery Buy all things that are standard and do it in time to have all things ready for the harvest.

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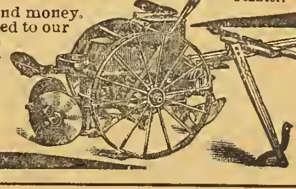

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The Ornamental Garden

BY ERNEST BRAUNTON, LOS ANGELES, CAL.

SUNFLOWERS VS. FEVER.

Consul-General Guenther, of Frankfort, writes that a Spanish professor, according to the German newspapers, has made the discovery that the sunflower yields a splendid febrifuge that can be used as a substitute for quinine.

More than ten years ago Moncorvo reported with reference to the same subject. Accordingly the sunflower should not only by its growing exert a great fever-dispelling effect but also yield a product which is used advantageously in malarial fever. The common sunflower is originally an American plant. Its original home is stated by botanists to be Peru and Mexico.

The Russian peasantry seem to be convinced that the plant possesses properties against fever, and fever patients sleep upon a bed made of sunflower leaves and also cover themselves with them. This use has recently induced a Russian physician to experiment with a coloring matter prepared from sunflower leaves, and it is stated that he had good results with it in malarial-fever cases. Moncorvo has also had good results with the coloring matter and with alcoholic extracts of the flowers and leaves. With 100 children from one month to twelve years old, he has, in the majority of cases, effected a speedy cure as otherwise with quinine.

SOUTH AFRICAN SHRUBS.

Halleria lucida, a scrophulariaceous shrub known as the African fly-honeysuckle, is still somewhat of a rarity though introduced to this coast some six years ago. It forms one of the neatest, cleanest shrubs we have, but most unfortunately it is known as a "shy bloomer."

A labiate quite common in California is Leonotis Leonurus, popularly known as the lion's tail. Lycium horridum, the African box thorn, a shrub often seen in the parks of Southern California, belongs to the tomato family (Solanaceae.) Acokanthera spectabilis, (Apocynaceae), and Asystasia bella completes a list of the better known Cape shrubs. The latter belongs to the order Acanthaceae and is best known under the name of Mackaya bella and with but few exceptions is so catalogued.

THE BOX TREE.

The boxwood tree (Buxus sempervirens), is a small evergreen seldom reaching over ten feet in California. It is a native of various parts of Europe and Asia. There are several varieties which are often cultivated for ornament, some with variegated foliage, and a very dwarf one, commonly employed for planting in continuous lines for the purpose of defining the edges of borders and walks in gardens, though never in extensive use in California. The wood of the box tree has long been celebrated for its hardness and closeness of grain. Its chief characteristics are excessive hardness, great weight, evenness and closeness of grain, light color, and its susceptibility to a fine polish. These are the qualities which render it so valuable to the wood engraver, the turner, the mathematical instrument maker, and others. The best is said to come from the vicinity of the Black Sea, and this formerly appeared in commerce in logs 4 feet long and from 6 to 9 inches in diameter. Some years ago both the dwarf and tree box was common in our nurseries, but of late years it has become quite scarce. Doubtless the air of California is too dry for its needs for in the damp climate of England and elsewhere, it grows luxuriantly, while with us the foliage burns if exposed to the full sun, and the tree always appears stunted.

INDIA RUBBER.

Ficus elastica, the India-rubber tree is a marked favorite in the more frostless parts of California, but in its native country it is looked upon only as the source of commercial rubber.

In tapping the trees the cuts are made at nearly right angles to the line of growth of the stem, aerial root, or branch at about 1.5 feet apart around half of the portion tapped. The cut is made only to the cambium layer. The overflow from the cuts is allowed to fall in mats made of thin strips of bamboo woven together. This drip rubber forms a kind of a skin over the mat and has a whitish appearance, whereas that which remains in the cuts has a reddish-brown color. The former, after drying, brings a slightly lower price in the market than that collected in the cuts.

RELIABLE NURSERY.

Buy your trees of the nearest reliable nurseryman. Then, if the varieties do not prove true to name, or if the trees are not what they were represented to be, you can take him to task and he will do the best he can to make it right. Men buy, through an agent, trees from a nursery several hundred miles away, when they could go to a nursery within a few miles and pick out trees of the varieties they wanted. Of course their high expectations were not realized, and nurserymen, the innocent as well as the guilty, are given all the blame. Mistakes will happen in the nursery business, as in all others, but there are honest men in the nursery business just as there are in all others, and by exercising a little care and caution you may find them, and you are pretty sure to get what you order.

CAPE JESSAMINE.

Some fine gardenias come from the Cape region, though strange to say the Cape jasmine (G. jasminoides) known usually as Gardenia florida is not native to Africa at all, getting its name from the fact that it was introduced to England by a sea captain who procured it in South Africa. The plant is a native of China. These plants must not be confounded with the true jasmines which belong to the olive family (Oleacae), for the Gardenias are rubiates.

OUR BEST PALM.

Phoenix Canariensis belongs to a genus of at least ten species, perhaps more, as botanists disagree as to what constitutes specific differences. Altogether about sixty species and varieties are known. The growth of the different species differ much. Some are almost stemless while others tower to one hundred or more feet. Some have claimed that P. Canariensis is a garden hybrid, though but little doubt exists on that question, botanists being fairly agreed that it is a native of the Canary Islands, from whence it takes its name. Of all the species so far known our subject is certainly the best for decorative use. In California it probably outnumbers all the others in the proportion of five hundred to one.

ELECTRIC LIGHT ON PLANTS.

M. Koller writes from Geneva that a remarkable example of the influence of electric light upon vegetation has been apparent this winter in several parts of the town. The Plane tree on the public promenades whose branches were illuminated by arc lamps, kept their leaves green long after the other branches were bare. On January 1 one could still see these green leaves on the trees that only frost has deprived of their beautiful covering.

We sell country lands. CHATFIELD & VINZENT, 228 Montgomery St., San Francisco, Cal.

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In the Vegetable Garden

BY ERNEST BRAUNTON

THE KIDNEY BEAN.

This species, with its numerous varieties. comprises all beans ordinarily used among us except the Lima bean. It is a native of a warm climate. probably South America, and was introduced into Europe in the sixteenth century. It was not known to the ancients. It has since become very important, chiefly because varieties of it are produced by the gardener and the quality thus improved by cultivation.

It is naturally a climber, but dwarf varieties have been developed which we call bush beans, which are used both as string or snap beans and as dried beans. This bean grows rapidly, flowering and seeding early. It has large. rough leaves. made up of three leaflets, and the butterfly shaped blossoms in clusters of from two to eight, start at the axils of the leaves. The pods and seeds are variously shaped and colored. The kidney beans may be divided into two groups —tough podded and edible podded. there being both bush and pole varieties of each group. A great number of varieties have been developed. each locality having its own favorites, and the tendency of growers to rename standard varieties of those which have developed only unimportant differences tends to confuse the nomenclature. The many "wax" beans belong to this species. Most of the "shell" beans which are eaten before fully ripe are of the pole varieties. The prejudice against beans that grow dark in cooking is unfortunate, since many of them are of fine quality and full flavored.

WINTER BLIGHT OF TOMATOES.

During the past fall a disease has come upon the winter tomato fields of the La Habra and other southern districts, and completely ruined them. In the district mentioned the shipments fell off within a very short time from 3,000 crates per day to practically nothing, and at a time when an increase should have been taking place. Many thousands of dollars were lost to the growers from this cutting-off of the crop just at the most profitable season. The disease which brought about this result may be designated by the above name according to the season of its occurrence, to distinguish it from the summer disease or blight. It may be said here that the Fusarium disease does not seem to continue into the fall, the late crops showing very little of this trouble.

After the heavy November rains of 1905 in Southern California, tomato picking and shipping were just approaching the height of the season. The vines were covered with green fruit, good returns had already been made, and an excellent prospect was in sight. Quite suddenly, however, in the early part of December or last of November, this winter blight appeared and ruined the crop. The period was one of warm days and cold nights, following heavy rain. The disease appeared quite differently from the summer blight. There was no wilting or gradual dying of the vines, but there first appeared dark, discolored spots on the fruit, stems, branches and leaves. On the fruit, a discolored, watery spot develops, usually on the upper side, and therefore mostly near the stem end. This increases quite rapidly, several spots appear on one tomato, and it soon rots and is spoiled. Fruit of all sizes is affected, from the smallest to that ready to pick. When sound appearing fruit is picked from affected vines, many of the tomatoes develop the spots and rot in the box within a few days. In moist weather a white, mildew-like mold comes out abundantly on the affected spots. On the stems and branches dark spots appear, and soon the whole vine becomes black and dead, with green tufts regaining here and there, exactly as though the field had been struck by frost. In many cases this blight was mistaken for the effects of frost, when no frost had occurred. In blighted fields the ground remained covered with tomatoes, all spotted, infected with rot, and worthless.

THE VEGETABLE GARDEN.

There is little danger of making the soil too rich for a vegetable garden, for vegetables seldom suffer at any time, in point of productiveness by reason of too rampant a vegetative growth.

The use of hand tools is unnecessary in the preparation of a seed bed if the soil is worked at the proper time.

The labor of hand weeding may be reduced to a minimum by planting in freshly worked soil only, tilling close to the rows early in the season, and permitting no weeds to ripen their seed.

The use of a wheel hoe saves labor in the care of a garden, even when much of the tillage is to be done with a horse.

The expense for labor in caring for a garden adequate to supply the needs of an ordinary family need not exceed twenty-five dollars a year.

The retail value of the vegetables which may be grown in a carefully planned and well kept garden greatly exceeds the cost of their production.

BEETS IN MICHIGAN.

Labor Commissioner McLeod of Michigan has isued a statement of the beet sugar industry of that state. The cost of the plants was $10,200,000, an average of $638,000 each. The aggregate acreage of beets raised in 1904 was 58,213, or 3,380 for each plant, and in 1905 was 79,457 acres, an average of 4,966. The acreage in 1904 produced 328,316 tons of beets, and the estimate for the 1905 season is 566,638 tons, the average tons per acre being 5.7 in 1904, and the average sugar percentage 15.2; for 1905 the figures are 7 and 15.2. Sugar made in 1904, 108,236,474 pounds, or 7,215,765 for each factory, and the corresponding estimates for the last campaign are 143,105,205 pounds total and 8,944,075 average.

POTATO SCAB.

Editor Cultivator: How can I treat my seed potatoes to make them immune from scab?—G. E. M., Monrovia.

Dissolve corrosive sublimate at the rate of one ounce to eight gallons of water and soak the seed potatoes in this solution for one and one-half hours.

A Great Money Maker for the Farmer and Gardener

Crimson Winter Rhubarb is Becoming a Greater Favorite Each Day, and an Unlimited Market Will Cause Greater Increase in its Planting

"Yes. I find Crimson Winter Rhubarb an exceedingly profitable crop. very easy to raise, very satisfactory to sell," remarked Mr. Chas. M. Braggs to the writer of this at Mr. Bragg's place near Garvanza last week. Mr. Bragg is not a grower of large quantities of the rhubarb, having only a total of 400 plants; but those 400 plants, which he placed in the ground last June, have brought to him since that time $150. The plants were secured from the nursery of Mr. J. B. Wagner of Pasadena.

Mr. Wagner has made a thorough study of this favorite plant for several years, his stock first being secured from the original distributor, Luther Burbank of Santa Rosa. Mr. Wagner secured the first 200 plants of this variety sent by Mr. Burbank to one party in Los Angeles County. This was five years ago; these plants are still producing enormously. It is doubtless one of the most successful of all Mr. Burbank's introductions, though it is probable that it is somewhat more limited in its field of general production than some others. The most favored location for this plant is California.

Mr. Wagner has taken pains to secure his seed from the original stock purchased of Burbank, which may be the cause of the large profits that come from planting of roots from his nursery.

We recently asked him as to the most favorable time for planting Crimson Winter Rhubarb and he said the present, or during March, April, May or June was the best time in the whole year. We note Mr. Bragg planted the 400 above mentioned in June. Every experience that we have heard has been that the first year's income has more than paid for the original investment of roots and the care of them for that year. As the life of the plant is said to be fifteen years. we may say, to express it mildly. that rhubarb culture "looks good to us."

The Cut on the Left Shows the Vigorous Growth of Stalks of Crimson Winter Rhubarb, While That on the Right Displays the Splendid Root System.

Regarding the market for rhubarb, there can be but little question, for as we know the field for culture is very limited and shipping quality is of the very best, and the "fruit," or stems' will bear shipment to any part of the United States. It is estimated that the city of Los Angeles alone will handle about seven car loads per week during the season, this being about the amount now used of the common rhubarb, so that as soon as the production of the superior article arrives at the stage which is beyond what local points can carry it will be comparatively easy to reach Eastern markets with the production.

The "fruit" is not only excellent for pies and sauce, and regarding both of these the writer can give the highest commendation, but it is also said to make one of the finest jellies, in which it is handled much the same way as currants or any other jelly producers.

Mr. Wagner not only has the original Burbank Crimson Rhubarb but on his large experimental farm at Pasadena he has all the leading sorts obtainable. which he is using for hybridizing or crossing purposes. He has thousands of these young hybrids on his test grounds, many of which show evidence of superiority. These he showed to Mr. J. C. Vaughan, president of the great Vaughan seed stores of New York and Chicago, who says the stems will average larger than any of the sorts common to the Eastern rhubarb grown. Mr. Vaughan also expressed a desire to secure the stock of this as soon as Mr. Wagner had it to offer, which will be at least three years.

Full information may be procured by writing him at Pasadena. He still has, we believe, some plants for sale, although the demand has been very heavy during the present season.

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San Francisco in Ruins—On Wednesday morning at 5:16 and at 8:45 earthquake shocks destroyed the greater portion of San Francisco. Fire followed in awful rapidity and left nothing in its wake in the district bounded by the shocks. As we write this we are unable to give definite data, but the telegraph reports from 1000 to 1500 lives lost, 50,000 people rendered homeless and about $200,000,000 in property destroyed. The shocks were felt 75 miles around San Francisco, partially wrecking San Jose, and many smaller towns along the coast. Nothing like this catastrophe has ever befallen the Pacific Coast.

It is useless to moralize. We are stunned to silence by the awful calamity. The cause is attributed by scientists to be the internal cooling of the earth which perforce must readjust its surface.

* * *

Criticising the Court—The opinion handed down by the Supreme Court of California recently, declaring unconstitutional the law enacted by the last legislature, requiring producers of butter, offered for sale to stamp each package with its actual weight, has provoked sharp criticism in the newspapers, especially north of the Tehachapi. The San Francisco Chronicle leads the criticism and pronounces the opinion the "over-riding of the judgment of the legislature which passed the statute and the governor who signed it."

"The object of the law," says the Chronicle, "was to put an end to a petty fraud which is peculiar not only to California, but to California north of the Tehachapi." The rolls were originally two-pound rolls, but in recent years have been made smaller, but of varying weight, to suit the requirements of tricky grocerymen who buy by the pound, but wish to sell by the "roll." The law was popular with the public, with producers, and with wholesale dealers. All butter is sold by actual weight until it passes from the retailer to the consumer. It put an end to a gross abuse and was in every way a good law. It could not for any reason be objectionable to any one who did not desire to commit or abet a fraud. Some one, however, contested the law, and the Supreme Court has held it "unconstitutional." It also declared void a law forbidding the second-hand traffic in theater tickets, which is another petty abuse which the legislature attempted to correct. In both cases the court simply held that the law was an "unreasonable" interference with private rights.

Continuing, the Chronicle adds: "The Court held that its judgment of "reasonableness" must override the judgment of the legislature. We do not know whether the judgment of the Court was unanimous—it seldom is—but, assuming that it was, we have the judgment of seven men as against that of the governor and the 120 members of the legislature, and, we may add, ninety-nine-hundredths of the suffering public."

The question the people of this government is discussing right now, in connection with many such decisions by courts, is, how far is the will of the people of this age to be overridden by court judgment. No matter how imperative may be the need of legislative reform ,there seems to be some way to find an "unconstitutional" loophole to thwart this need. We anticipate such a finding if congress shall enact the rate bill.

Corporations will appeal and nine chances out of ten the Court will hold the law "unconstitutional."

In the case of the butter weight law and also in the case of the second-hand traffic in theater tickets, it is difficult to see where the laws so essential to public protection could be "unconstitutional." But the Supreme Court had the last say and it said enough to render both laws invalid. The Chronicle says in concluding its article: "But these laws were good laws, and if it was "reasonable" that such petty frauds should be suppressed, they were valid. And on that point the opinion of the public—when so nearly unanimous as in this case—is better than that of any "Court" on earth."

* * *

Orchard Vandals—The report comes from the orange growing district of Covina, that some one has been industriously spreading the purple scale on the trees. It would seem that such an act would be beyond the conscience of man to perform. It is the most criminal, act which can be conceived outside of wantonly barking or cutting the trees. When the county expends so great an amount annually to support a Horticultural Commission with its corps of inspectors, whose business it is to fight scale and pests, it seems impossible that any one could be found degenerate enough to engage in the work of spreading scale in the orchards. It could only be done for one of two reasons; first, a deliberate desire to do a great wrong—to get even with some person—or to make the work of the Horticultural Commission more exacting. There are many people who do not think the Horticultural Commission has much to do, that it is a sort of a political sinecure, held by local politicians and is of no particular value to the country. But however widespread may be this idea, where is there a man mean enough to perpetrate so gross a wrong simply to vent a personal spite on the Commission, or any private individual?

The orchardists of Covina ought to institute a thorough investigation to ascertain the cause of this unusual appearance of the pest and if it shall be found there is going on a systematic effort to infest the orchards with the scale, the guilty party should be hunted down and vigorously prosecuted. At any cost extreme care should be taken to fumigate the trees before the scale shall fasten itself on the district. The purple scale is the worst pest that infects the citrus trees, the most insidious and damaging and the most difficult to eradicate. It needs prompt treatment when it appears and should be treated effectively. The orange growers of Covina, however, are wide awake and will not sleep while this danger confronts them.

* * *

Fire Protection for Forests—The Cultivator has received a circular letter which E. T. Allen, the State Forester, has addressed to Boards of Trade throughout California, urging them to extend their efforts to put into active effect the law passed by the legislature last year, for the protection of forests of the State. It is to be hoped the appeal may receive the hearty co-operation of every Chamber of Commerce and Board of Trade in California, for the reason that heretofore our forest preserves have suffered incalculable damage from fires. The State Forester urges immediate action on the part of the bodies appealed to on the ground that forest fires cause a great loss of property and natural resources; have a damaging influence on investment values and insurance rates; are a menace to irrigation and power enterprises; threaten or cause large private losses annually, and attack the general prosperity and prospects of development and the tax revenues of the counties wherein they occur.

The law passed by the legislature provides for the co-operation of the county Boards of Supervisors with the State Forester for the organization and control of a forest-fire patrol in each county. The State Forester has the exclusive right under the law to authorize and empower the officials appointed by the Supervisors; but their pay, during the term of service, must be provided for by the latter. The State Forester emphasizes the fact that his "office is unable to support a local organization, and no local organization can have adequate authority" except through his office. "Together," he adds, "we can keep up a good system," which will afford due protection to the forests not included in the national reserves. He, therefore, appeals to the Chambers of Commerce and Boards of Trade to adopt a resolution recommending immediate action on the part of the respective Boards of County Supervisors as the dry season, when forest fires are prevalent, is close at hand.

FARMERS' INSTITUTES.

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Corona, May 2-3.
Anaheim, May 4-5.
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El Cajon, May 11 and 12.
Chula Vista, May 11-12.

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Are the only kind of nursery stock we have grown for the past twenty years, and being the largest producers in the world we feel that we are in a position to render intending planters better service in the way of superior trees over all competitors. Our prices are right, considering quality.

Good Trees mean Good Profits

A poor tree is expensive as a gift, and an untrue-to-name plant an aggravation and waste of time, labor and money. When you plant an orange grove remember Davy Crocket's advice, "Be sure you are right, then go ahead."

We stand ready to prove to you that you will be right when planting our trees. Correspondence a pleasure, and our booklet on Citrus Culture is free.

R. M. Teague
PROPRIETOR
SAN DIMAS
CALIFORNIA.
HEWITT ADV

NEWS OF COUNTRY LIFE IN THE GOLDEN WEST

HORTICULTURE.

In one year Dinuba Station received 25 cars of grape stakes.

A large cold storage plant for fruits and flowers of latest design is being built at Chico.

A cluster of oranges containing nine, and weighing four pounds and ten ounces, on one stem. is being exhibited at Highlands.

The Porterville Realty Board has decided to hold an Eastern Tulare County Citrus Fair in Porterville the last week in November.

A compromise has been reached by the California wine makers and the wine interests of New York and Ohio under which the Fassett Pure Wine Bill will probably become a law in the interest of the grape growers of the section named.

The annual meeting of the California Fruit Growers' Association of San Francisco was held April 11th. The net profits reported over $463,985 and a surplus and reserve of this association now aggregating $1,161,770.

The manager of the Highlands Orange Growers' Association packed a box of oranges, 64 in number, on January 1st of this year. He left the box in the packing house for 90 days and on opening it only four decayed oranges were found.

J. H. Adams, one of the large oranges growers of the Covina district, is authority for the statement that some person is deliberately attempting to scatter throughout the orange purple scale, Mytilaspis citriola. He offers $1,000 reward for the arrest and conviction of the fellow.

The Tulare County Citrus Fruit Exchange has collected $4639.54 of old claims against the railroads since January 1st, 1905. Within the past five years about $12,000 have been collected in claims which have gone into the pockets of the citrus growers.

At the Chamber of Commerce, Los Angeles, last Saturday a joint meeting of directors of the eleven walnut associations of Southern California was held to fix prices for the current season, but that was deferred to a later date. The largest single detail of the meeting was the letting of the bag contract. The total of 105,000 bags will be called for to handle this year's crop.

AGRICULTURE.

The great sugar factory is being completed at Hamilton.

California asparagus has been selling for the fast few days in the New York market at 60 and 75 cents per pound.

The farmers around Chico and Hamilton are re-seeding their beet ground which was deluged with water during the recent heavy storms.

Santa Ana wants a pickle factory and also, says the Bulletin, a factory that will utilize those fruit and vegetable products which are now going to waste.

A Huntington Beach man planted last year 60 acres to beets. and the gross receipts from the crop totaled $7,500, and he expects this year from 120 acres to realize $11,000.

Mr. Lewis of Corcoran has 400 acres planted in asparagus, says the Hanford Sentinel. which is now two feet high and will soon be ready for cutting, when the profits will be very great.

Sacramento County Pomona Grange own their own picnic grounds and manage it under the Elk Grove Park Association. Last year the picnic netted $300 for the Grange, which now has $400 in the treasury.

The Los Alamitos Sugar factory management reports 7,000 acres planted to beets which promise the best yield in years. The factory will make a run of at least 120 days, and will be in operation about the middle of July.

The Hanford Sentinel says that 10,000 acres in the neighborhood of Corcoran have been irrigated from the waters of Cross Creek and Two Rivers, and the prospect is that 2000 acres more will also be wet. Corcoran is reaping the benefit of this surplus water.

The Adams bill providing for an increased appropriation to agricultural experimental stations at the 56th Congress will raise California's quota to $20.000 a year, available June 30th, 1906. Thereafter by a gradual increase the apropriation will be increased to $30,000 a year.

J. H. Roth of Rockyford, Colorado, the section famous for its canteloupes, is in California arranging for the planting of the genuine Rockyford melon, from selected seed, in all sections along the coast where melons can be raised to advantage. In San Diego County he succeeded in having planted 2500 acres in Rockyford melons.

An invasion of the army worm is greatly feared by the farmers of San Bernardino County. The pest has already made its appearance in great numbers. The seeds and tall grass should be cut immediately on the appearance of the worm and the ground thinly covered with slacked lime to the very edges of the parts worked by the worm and the ground thoroughly saturated.

LIVE STOCK.

California produced 42,000.000 lbs. of butter in 1905.

A freak of nature in the form of a two-headed calf was exhibited at Santa Maria this week.

The first creamery in Josephine County, Oregon. will be ready for business by the first of May.

Escondido shipped last week 219 cases of eggs. 2134 pounds of chickens, 2910 pounds of cream and 2249 pounds of butter.

The United States Department of Agriculture estimates the number of milch cows in California January 1st, 1906. at 390,115.

Southern California and San Francisco as well have been receiving carloads of dressed hogs from the East. This is an unusual condition.

Horses in Mendocino County have been afflicted this winter with a very peculiar mange which has cost many of them their manes and tails.

The Chino Champion says 4000 cattle from Utah will be fattened on pulp from the sugar factory this summer. It will require 140 cars to move the herd.

The Shasta County Live Stock Association held its monthly meeting at Redding last week and reports of the stock industry in that county were very flattering.

The price of mutton and pork keeps up, and the producers have not experienced such conditions for a long time. The price of mutton is almost double what it was a year ago.

A cattle grower named Williams in Monterey County will have shipped to his farm this spring 50 head of full blood Short Horn cattle. from which he expects to build up a very fine herd in the near future.

Secretary Hitchcock has recommended to Congress an appropriation of $30.000 for the purchase of heifers and bulls for issue to the northern Cheyenne Indians at the Tongue River Indian Agency in Montana.

The sugar beet field in the Santa Maria Valley will have an acreage of between 10.000 and 12,000 acres. The sugar factory will have an output this season of about a million bags. The run will begin in June and continue seven or eights months.

The common council of Marysville is arranging to systematically fight the mosquito plague again this year by oiling the water holes, the gutters, the mud holes, and the cesspools throughout the city. and the farmers of the county are preparing likewise to fight the pest in the interests of their stock.

Unsatisfactory market conditions and unjust methods of weighing cattle are responsible for the organization of the California Cattlemen's Association, which has for its president Mr. J. R. Hebbron of Salinas, and Mr. Wm. Pinkerton of Pleyto for its secretary. The principal objects of this association are: (1st) to secure protection from the "beef trust." (2nd) To obtain prices for live stock commensurate with the prices charged by the butcher. (3rd) To reduce the evil of sending cattle to the slaughterhouse to be killed on commission. (4th) To remedy the method of weighing cattle from the producer to the wholesaler.—Porterville Enterprise.

MISCELLANEOUS.

Castroville has organized a chamber of commerce.

L. P. Mitchell has purchased the Azusa Pomotropic.

Natural gas has been struck at Alamitos at a depth of 490 feet.

The Santa Fe Railroad Company is building a $10,000 depot at Corcoran.

The citizens of Redlands are discussing the feasibility of establishing a military school.

The Ukiah Times is earnestly advocating good roads and bridges for Mendocino County.

Capital has been subscribed for the establishment of a large cement factory near Hollister.

Santa Ana is to have a sewer farm with septic tanks. The cost of the tanks will be $1000 each.

J. H. Reed of Riverside is engaged in planting trees along most of the principal streets of that city.

Watsonville is already "hurrahing" for the biggest Fourth of July celebration to be held in theState.

The Jacinto Gun club is preparing for a shooting tournament to be held April 24th, 25th and 26th.

Covina will celebrate today with Arbor Day exercises, the planting of many trees on the public streets.

The city of Tulare has arranged for a flower carnival May 4th and 5th and anticipates a great crowd present.

The contract has been let for the construction of an electric railway between Marysville, Chico and Oroville.

An epidemic of bogus dollars has broken out at Marysville and the officers of that town are endeavoring to locate the maker thereof.

LINER ADVERTISING

Advertisements in Liner Column will be charged 1¼ cents per word. No advertisement taken for less than 25 cents. Eight words to a line.

LINERS

ANCONA EGGS (FROM PERPETUAL EGG Machines), imported and domestic matings, $2, $3.50 and $5.00. L. L. Viereck, Pres. Ancona Club, Albany, Oregon.

FOR SALE CHEAP, 25 H. P. HOADLEY Portable Steam Engine. New boiler rigged for oil. Everything in first class condition. Enterprise Mfg. Co. San Jose, Cal.

WANTED—WILD TURKEYS EGGS AT $100 00 per setting. Address only The Grace Glory Grounds, Brawley, Calififornia. Wilds of wildTurkeys (acclimated).

BLUE ANDALUSIAN EGGS FOR HATCHING, from three noted strains, $2.50 and $3. Incubator lots $7.50 to $15.00 per 100. Mrs. T. R. Griffith, 3111 Walton avenue, Los Angeles.

FOR SALE, THOROUGHBRED, AND from prize winning Stock, Barred Rocks and White Leghorn Chickens, also eggs for hatching. Mrs. Ossina Low, Glendale. Cal. 'Phone 663.

I HAVE ABOUT ONE HUNDRED INDIAN Runner Ducks for sale, pure last years(1905) stock. Also 2 doz. Toulouse Geese, last years stock. J. H. Brown, R. F. D. No. 1, Box 195, Long Beach, Cal.

FRUIT CANNING MACHINERY FOR THE Ranch or Factory, 6sizes, $10 to $225. All appliances, highest award by U. S. Trades Report. Address, W. S. Ritchie, Pacific Coast General Agent, Corona, Cal.

I HAVE 1400 FEET GALVANIZED IRON pipe, suitable for irrgiating. 1000 feet 10-inch and 400 feet 12-inch, all nearly new. Also a 90-foot cow barn fitted with wood stanchions Will be sold cheap. Call at Latin Station on Long Beach Electric line or address R. D. No. 2 Compton, Cal. H. F. Starks.

COLUMBIAN WYANDOTTE EGGS FROM winners; first ckl.; first pullet, New York; first, second, fourth, and sixth pullet; fifth cock at Boston. Eggs from $2.00 to $5.00 sitting. Send for circular. Prof. John Evans & Son, Meshanticut, R. I.

FOR SALE—WHITE MINORCAS EGGS $1.50 sitting from one of the nicest pens of Wh. Minorcas in Southern California. Lay the most eggs and the largest-whitest eggs of any breed. Call and see them at 547 W 54 St., or address 1004 E. 9th St. Also incubator chicks for sale.

Edison Phonographs and Records at factory prices, delivered free anywhere on receipt of full retail price; largest stock of Edison records west of Rockies; send for circulars. Peter Bacigalupi, 786 Mission St. San Francisco

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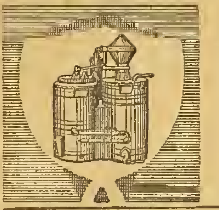
Burr-Paddon Co., 40 Montgomery St., San Francisco



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Let Us Tell You About It.
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You can burn 100,000 cubic feet of air with every 130 gallons of oil, this means perfect combustion. To burn more than 100,000 cubic feet of air with 130 gallons of oil, there is a decided loss of heat. To burn less than 100,000 cubic feet of air there is a loss of fuel.
The only safe and reliable burner on the market.
Send for full particulars.
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Greatest National Bank West of Denver and South of San Francisco
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United States Depository for Government Funds
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PRESIDENT—J. M. ELLIOTT. VICE-PRESIDENTS—STODDARD JESS, W. C. PATTERSON, GEO. E. BITTINGER, J. S. CRAVENS. CASHIER—W. T. S. HAMMOND. ASSISTANT CASHIERS—A. C. WAY, E. S. PAULY, E. W. COE, A. B. JONES.
First National Bank, Los Angeles, Cal.

Live Stock and the Dairy

BY MRS. MINNA E. SHERMAN, FRESNO, CAL.

FILLING THE SILO.

The silo is filled with cut-up corn or alfalfa, or whatever crop has been intended for it, the cutter is set for a two-inch cut and the elevator is in place to take it to the top of the silo. As the teams must be kept moving busily all the time, it is better to buy a large sized cutter. one that has several tons an hour capacity, than to have the cutter so small that the teams must wait for it to take care of the corn hauled in. The new blower arrangement is said to be an improvement, and if I was buying a new outfit I should examine carefully into their merits before deciding as to which I preferred, the elevator or the blower. At present we are using the old elevator, because it is not worn out. The elevator was troublesome until we changed the chains for the simplest open link pattern that did not clog and collect a mass of corn that finally wrecked the link.

The traveling table works well with corn but clogs up with alfalfa so that it is useless to feed the cutter.

The engine must be a simple one, that the ordinary ranch hand can run. If it is necessary to pay a man with a certificate to run the engine it will usually result in the owner as a measure of economy, running the engine himself, and it is not pleasant work. I have not found anything as satisfactory as the old-fashioned thresher engine mounted on a horizontal boiler. This can be run on bundled vineyard brush, straw, or can be arranged with a crude oil burner. Four years ago the old Rice outfit, a relic from the days of grain farming, gave way to the improved gasoline engine and that in turn to an engine burning distillate; but a return to the old engine is contemplated with joy by the foreman.

The ordinary labor, meaning the men, the extraordinary labor, meaning the foreman and owner, cannot make the gasoline engine run with any degree of regularity. We have all heard how others start them off and never have to visit them except to see that they are oiled and have fuel. Well, ours have not been built on that plan; we spend most of our time visiting them, as they were always standing still waiting for a call from the town mechanic at $5 a day and car fare. This was increasing the cost of silage woefully. The cost of cutting, hauling and putting the corn into the silo with the old engine averaged for five years, amounted to one dollar and eighteen cents per ton, while the three years with the gasoline engine, it has risen to an average of three dollars and twenty cents per ton, and considerable loss of temper. The foreman pleads for the repairs of the old thresher engine and describes his woes as follows: "When the old engine acted cranky every one knew what to do, but when these new engines go queer, you do everything you have been instructed to do, and yet she stands still; then you take a monkey-wrench and hit her here and there all arounds, then you say your prayers and maybe she will start up, if you are not too great a sinner."

While the silage is being put into the silo the tramping must be well done, but I talked of that last week, and will not repeat it here.

After talking at the El Cajon institute, I found there they had better results from not wetting the silage. I told Carl about it when I came home. He has been here on the ranch 18 years and thinks that unless the water shows on the ground around the silo it is not wet enough. Now I think this man Carl knows, as he tramps the silage and later feeds out every foot of it to the cows. He watches for bad spots and then forms his conclusions and the next year tries to make it different. The filling of the silo goes on until ten or twelve feet are put in solid and the crew is laid off until the silage heats and cools until the arm can bear the heat at a depth of a foot from the top. When cooled down to this degree, or about 110 by the thermometer, and another ten or twelve feet is put on it, if the filling is done too slowly, the heat never rises high enough to cook the feed, and the silage is sour, while if it is filled to the top at once there is a mass that burns to blackness at the bottom and smells like burnt molasses. The cows do not care for this, and it is usually thrown on top the manure pile, though if it is not too bad some of them will eat it.

Good silage is the color of cooked cabbage. or about like sauer kraut in appearance, and should smell like fresh brewed grain. The tools we use in harvesting corn are not expensive, as the Eastern binders are too light to bind the corn grown in the San Joaquin, the old-fashioned corn knife has again come into use. A low wagon to haul corn is convenient and can easily be constructed out of a common farm wagon, the wheels and axles are taken from the reach and two eighteen-foot four by four, are chained together under the axles low enough to be about eighteen inches from the ground back far enough to clear the wheels; a bed is made of scantling, nailed four inches apart and this bed is seven or eight feet wide. In the field the horses move along and one man cuts, another catches the corn and lays it across the wagon bed. By the time the load is made up to the capacity of the wagon, it is not above the reach of a man standing on the ground. When it comes to the cutter it is easily taken off by tilting it over from the top on to the platform. Plenty of wagons are needed and a platform large enough to hold several loads of corn. The wagons start the first thing in the morning to the field and the cutter and tramping crew go with them. Everybody cuts and loads up the wagons. The first wagon in from the field takes two men with it and one remains at the cutting table to help unload the next wagon, so one man is there unloading and it is accomplished without waste of time and the wagon comes back promptly to receive a second load. After the first wagon arrives there should be a constant succession of arrivals at the cutter. When there are too many men standing around the money is being wasted. As soon as the cutting platform is full, then have the next wagon haul less corn, sending in the silo crew, leaving only the crew that is the regular corn gatherers at work. Start the engine, begin on the piled up corn. The secret of handling work is to move with a snap and do the work with a swing. The men will like to work for you if things move, for if they are worth anything as men, they hate to drag at their work. Now, after we have made a hard week's pull altogether, and the silo is nearly finished at Saturday noon, say to the boys; there is only a couple more hours' work ahead, and let's put it through and the time after we have finished is yours. You can quit when the silo is full and the teams are put away. A little appreciation like this and you find the laboring man of California full of response. They are faithful and if we are faithful to see life from their standpoint, few of the grievances that arise between the man and boss will be serious. Right doing and right thinking of them as fellow-beings and as being exactly like ourselves, makes them responsive to our wishes, and the work swings along "full of go."

BALANCED RATION.

Editor Cultivator: Can you give a balanced ration for a young Jersey cow which weighs about 750 pounds, that gives 25 pounds of milk, averaging five per cent?

The best ration we can suggest is a liberal supply of alfalfa, and a daily allowance of four pounds chop (corn-meal unbolted), three pounds of bran and one pound gluten feed, with daily salt about two ounces. Curry the cow with comb every morning.

Milk Coolers, all sizes, all prices. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

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T. WAITE, PERKINS, CAL.

GEO. C. ROEDING, BREEDER OF HIGH-GRADE
Thoroughbred Holstein Bulls and Heifers
Thoroughbred Berkshire Boars and Sows
FRESNO, CALIFORNIA

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We make a specialty of Sanitary Creamery and Dairy Outfits. Our stock all new and we handle only the very best and latest improved machinery. Write us.

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Tanks for stock, oil, water, wine and cyanide. It will cost you one cent to get my prices. In stock, tanks from 1000 to 10,000 gallons. Get my delivered prices. I can save you money. An expert is not needed to erect my tanks.
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Corrugated Galvanized
STEEL TANK
in California. Just the thing for the farmer. No leaks, no driving of hoops after a few days of warm weather. Shipped to any part of the coast. Prices on application. Write for description and catalog. Address all mail
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Cream Separators in Nebraska

Within a few years Nebraska has come to be the greatest farm cream separator state in the Union. According to a recent census of the Nebraska State Experiment Station nearly 35,000 separators are in use today among Nebraska farmers. Without doubt this is a greater number of machines by a large majority than can be found anywhere else in a territory of this size. This universal use of the cream separator in Nebraska speaks volumes for it as a money making machine for the farmer. More and more each year is the farm separator becoming a big factor in the prosperity of the country. Through its introduction in many instances large territories throughout the middle-west have been converted from practically barren wastes into prosperous farming lands. Thousands of farmers living in the corn and wheat belts who were formerly engaged in raising grain and general farming are today making a specialty of dairying simply because the farm cream separator has made dairying a great deal more profitable than general farming. From Maine to California a great wave of reform in dairying and farming methods is sweeping over the country, and the cream separator is back of it all. Cow owners everywhere are awakening to the fact that a good cream separator is as necessary an article on the farm as a plow. According to present indications more farm cream separators will be sold in 1906 than ever have been in any year up to the present time.

In this connection, as an item of interest to all, the Nebraska Experiment Station authorities are quoted as estimating that from 85 to 90 per cent of the nearly 35,000 separators in use in Nebraska are the famous DE LAVAL machines. These well known separators are universally used in every part of the world, and in view of the exceptional efficiency and the general satisfaction they give the user it is not surprising to find that over 85 per cent of the separators in use in Nebraska are of DE LAVAL make. A handsomely illustrated catalogue of the DE LAVAL machines and any desired information can be had for the asking by addressing

DE LAVAL DAIRY SUPPLY CO.
9-11 DRUMM ST. SAN FRANCISCO
107 FIRST ST. PORTLAND
123 N. MAIN ST. LOS ANGELES
1017 POST ST. SEATTLE

MODERN BUTTERMAKING

F. D. Curtiss, a Wisconsin dairyman, revolutionized buttermaking. In the Iowa Homestead. H. C. Bennett gives some of his methods. They are of interest to buttermakers. He rigged up a barrel, attached a crank with which to revolve it, and in his kitchen was born "granular buttermaking," and the sturdy Curtiss stood the acknowledged father of modern buttermaking. True, recognition from his own class of private dairymen was tardy, but creamery buttermakers took it up and gained so much better price for their butter than the old-fashioned dairy butter could command that private dairymen have been forced to adopt it or suffer the loss of the top market.

Mrs. Jones, of Canada, revealed the secrets of successful dairying in a most sweet and persuasive way, and made an entire success of it in her own work. It was a beautiful appeal to her sisters, and stirred many women to a love for the work and a desire for improved methods, but to wish and to secure are two different things when the wisher does not hold the purse. But Mr. Curtiss spoke to men, and the men who heeded him speedily adopted the new method and the apparatus suited to the work. A man may put off the wife when she calls for machinery, but when he wants a machine himself he gets it.

Herein lies the advantage of the granular method over the old method of churning to a mass. The mass holds locked up in it a lot of buttermilk and casein which causes decay and rankness. But if the churning is stopped while the butter is in small granules and is then thoroughly washed with pure water of the right temperature the surplus casein and buttermilk is washed out and the butter has a fine aromatic, rosy flavor, provided, of course, the cream was clean, properly ripened, churned and worked at the right temperature.

By "right temperature" is meant that temperature which brings the butter in granules so firm that they will resist a mild pressure, but will mass in a waxy consistency under the pressure of the fingers.

The tactile sense—the sense of touch—needs to be cultivated, but it is wrong to handle butter with the hand except to test it by touch, to learn its consistency. If it is found to be a little too soft, firm it by the use of a wash water cold enough to be hard and unyielding, temper with wash water warm enough to make it waxy. The learner will do well to wash the granular butter in two waters. After he becomes tolerably expert he can do it with one washing.

As to the kind of churn, use a box churn, a barrel churn or a swing churn—not the old dash churn, nor any "ten minute churn," nor any kind which has "inside fixings" for churning. Churning should be done by concussion, not by grinding or stirring. And the churn must be large enough so that the fall of the cream will make the concussion sufficient. Also it is necessary that the churn be not more than about one-third full, or the fall of the cream will be diminished, and the churning will be delayed and wasteful of unchurned butter fat left in the buttermilk. The mistake in selecting a churn is almost invariably in getting one too small, rarely, if ever, one too large.

Before churning is commenced a little commercial butter color should be added to the cream except when the cows are eating grass. Of course for home use the color may be omitted, but the market demand is for the color natural to grass butter the year round—the natural June color—but do not overcolor, as it gives it a repulsive appearance.

If not more than ten to fifteen lbs. are made at once the salt can be added to the granular butter in the churn, the churn slowly revolved to incorporate the salt with the butter, then press the butter down firmly with a pestle or potato masher, pile it in a heap with a butter ladle and repeat the pressing down until the salt is dissolved and the surplus brine is worked out. If the churning is large—from fifteen to sixteen pounds—the salt may be added as before and incorporated by slow revolution of the churn, then the butter taken out and finished on a butter worker. With a combined churn and worker, follow the directions accompanying the machine and finish the butter in the churn.

Cream from a separator can be churned at a lower temperature than cream from hand skimming, as it contains less fibrin and will not foam so readily. It is therefore easier to make good butter with separator cream. One precaution—do not overchurn nor overwork. It spoils the body or grain of the butter. Nearly all women do both—it is the old way. If packed in a jar or tub, fill it full and press down solid, leaving no air spaces and cut off the top with a straight edge—do not rub or scrape it off—then cover with cloth and sprinkle salt over the cloth. Use good dairy salt, not stock salt or ordinary barrel salt. It is impure and unfit for the purpose.

Here are the main cautions to bear in mind:

Do not hold the cream too long.

Do not churn too long.

Do not rub the butter nor handle it with the hands.

Do not overwork the butter.

Do not use poor salt.

The right temperature for churning and working depends somewhat upon the individuality of the cow—more upon the feed and the length of time since they were fresh. Cottonseed by-products used as a feed make the butter hard in texture, and a warmer temperature is necessary to make the butter pliant. Oil meal makes a soft butter and the cream must be churned at a low temperature. Bran makes cream churn easy and makes waxy butter if the temperature is right. Grass milk makes churning easy, and calls for a low temperature for best results. As a rule, except in winter, the butter needs firming after it is in granular form, and cold water will do this. One thing the novice needs to learn in the beginning—to stop each part of the work in time. Overdoing is the usual mistake.—E. C. Bennett, Bremer County, Iowa.

HOG CHOLERA VACCINE.

Editor Cultivator: Please tell me if there is any vaccine for hogs to remedy cholera.—E. B. B., San Diego.

We do not know of any reliable vaccine for hogs. Write the Department of Animal Industry, Washington, D. C., for information.

Veterinary Instruments, Black Leg and Anthrax Cure. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

Advertising Column for Members
OF THE
JERSEY BREEDERS ASSOCIATION
OF SOUTHERN CALIFORNIA

Organized for the general advancement of Jersey interests, to extend knowledge of their superior merits, for the mutual benefit of members, and to increase the profitableness of one of the State's greatest industries. Breeders are requested to unite with the Association.

FOR SALE

A registered bull calf, 6 months old and a beauty. Uniting the blood of the famous World Fair champion cows Ida Marigold and Brown Bessie combined with the Sweepstakes' Bull Pedro.

No finer combination in breeding can be found in the State. This individual is fit to head the best herd. It won't cost you any thing to see him if you call at our office any afternoon.

Sterling Milk Co. 205 Taje Bldg. Los Angeles, Cal.

BULL FOR SALE

Having sold my ranch I am forced to sell Golden of Biltmore. 60082, a grandson of Golden Lad's. Golden of Biltmore is one of the best, ***if not the best*** sire on the coast, several of his daughters less than two years old selling for over $200 each. Highest bidder for next sixty days takes him. If everything is not just as represented, I will give anyone the ***bull free of charge. I sell on merit.***

C. S. Burgess, Riverside, Cal.

Pure St. Lambert Bull
—ST. LAMBERT OF RAMONA, No. 62633,—
heads the Ramona Herd of Registered Jerseys of
Geo. W. Thomas, Riverside, Cal.

The Whiting Jersey Stock Farm Co.

Have moved their herd of Jerseys from San Bernardino, Cal., to the famous Imperial Valley, and hereafter their post office address will be Heber, San Diego Co., Cal., from which they will conduct all their business. Abundant green feed every day in the year will be of great advantage in the best development of our young stock.

Whiting Jersey Stock Farm Co., Heber, San Diego Co., Cal.

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Service bull "SARGENT FOX," 64833. Bred on the Island of Jersey. Sire, the great Flying Fox, that sold at auction for $7,500. Dam, Miss Sargent, reserve winner over Jersey; winner of seven first prizes and five championship cups. "One of the grandest cows the island has ever produced."

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For Sale, yearling bull Ruth's Gordon King, No. 72360 A. J. C. C. He is of richest breeding on both sire and dam's sides. Also three richly bred heifer calves by Marigold's Exile King, from cows that are good yearly producers. For particulars write

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Sons of imported Golden Marquis out of prize winning and tested dams. for sale.

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At head of herd. Young stock for sale.

H. N. WILLIAMS COMPTON, CAL.

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High grade stock of best strains Young stock for sale. **M. BASSETT, HANFORD, CAL.**

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Four thoroughbred bull Calves from (6) six weeks to (3) months old, De Kol Strain. For information see or write
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Pink Eye, Distemper and all diseases Nose and Throat

Cures the sick and acts as a preventive for others, and is given on the teeth and tongue. Safe for Brood Mares and Colts and all others. $1.00 per box, ½ doz. $5.00. Sold by druggists, or sent express paid.

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Are given the preference by 80% of California stockmen because they give better results than others do.

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THE CUTTER LARORATORY
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Just facts—that's all you want. Facts can't hurt you nor Tubular Cream Separators. Facts prove Tubulars outwear all other makes five to ten times over.

On August 2d, 1904, we started a No. 9 hand driven Dairy Tubular, rated capacity 900 lbs. per hour, on the hardest test a separator was ever put to—an endurance test to last until the wearing parts give way. This Tubular has now run 50 hours a week for 43 weeks—and is still running. Every week of this test is equal to a year's service in a ten cow dairy. No other separator made could stand such a test.

24 Years' Work—No Repairs

Hours run	1,200
Pounds separated	1,080,000
Turns of crank	3,155,760
Turns of bowl	1,152,000,000
Oil used	8 quarts
Time oiling	About 4 min.
Time adjusting	None
Repairs	None

43 Years' Work—75c Repairs

Hours run	2,150
Pounds separated	1,935,000
Turns of crank	5,652,070
Turns of bowl	1,864,000,000
Oil used	5⅜ quarts
Time oiling	About 7 min.
Time adjusting	10 min.
Repairs	75 cents

After 24 weeks, the balls in the frictionless bearing supporting the bowl showed wear. This was natural, for each had rolled over 32,000 miles. Renewing balls cost only 75 cents and ten minutes adjusting, yet made this Tubular as good as new. All Tubulars are equally durable. Catalogue P-260 tells about them. Write for it today.

THE SHARPLES SEPARATOR CO.
Toronto, Canada West Chester, Pa. Chicago, Illinois

There are more of the **Sharples Tubular Cream Separators** in use in California than all other makes combined. Write at once to the State Agents for Catalog R. Address **Joshua Hendy Machine Works**, Separator Dept., 61-77 Fremont St., San Francisco, Cal.

Profit in the Poultry Yard

BY MRS. A. BASLEY, HOLLYWOOD, CAL.

TRAP NEST IMPROVEMENT.

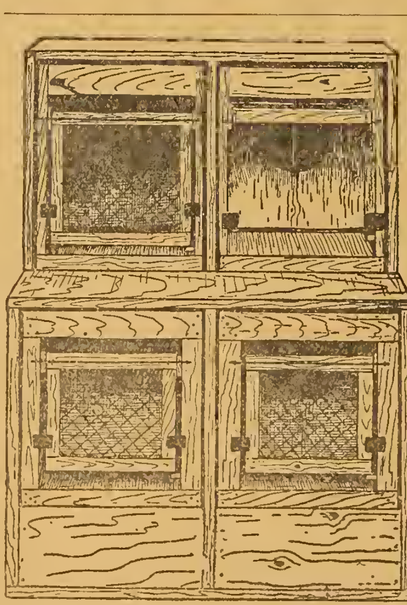
In response to many requests for plans and descriptions of trap nests from some of our many new subscribers. the following cuts and descriptions from the government Experiment Station in Maine are given and to the old subscribers I will say you can skip this page and feel glad you rarely have any repetitions in our talks on the topic of success with poultry in the Cultivator.

The reason I have headed this with "Trap Nest Improvements" is not that I mean improvement in the trap nests themselves, for I doubt if there is a better one made than this. but I want to talk a little about the improvements that comes to a flock on which trap nests are used. It would amaze a good many poultry men, if they should keep a trap nest record of their hens to discover how many of them do not pay their way. whilst it might delight them to find how well some of their hens were laying and how many eggs they were producing in a year.

To discover these things is well worth while, but heretofore poultrymen have been slow to take up trap nests, because of a belief that the time taken in attending them would make it costly. This is a mistake. as has been shown by M. K. Boyer and many other careful operators. I have used the nests and studied the question for years and I am ready to -- that the results are so great and so valuable that the time expended should not be considered. I wish I could say something that would impress on our readers the importance of knowing just what their hens, as individuals, are doing for them. It is a nice thing to have a flock which averages well in egg production but it would be far better to have one is which each individual hen is a grand producer.

When I was in the poultry business by selecting eggs from the best layers, I had soon 200-egg layers in all my pens, in fact I will confess that amongst them I had some that layed two eggs a day. Now this is more than I would demand from any hen. One egg a day every day in the year is enough.

When I left the business to take care of my little granddaughter. my good friend. Mrs. Rhoda E. Durfee, of Santa Ana (see her advertisement) continued the business with my stock on the same lines. She recently sold some pullets to Mrs. S. A. Pease, wife of the Horticultural Commissioner of San Bernardino and when I was up there last week, Mrs. Pease showed me the pullet which had twice laid two eggs in one day, she said she would have never discovered it but for the trap nest. Both of these ladies make their own trap nests from the description given below. There are a number of poultry raisers in Southern California that are now using trap nests and so improving their flocks. Mr. Howe. manager of the W. W. Howard ranch tells me that they use the trap doors which Mrs. Howard invented each and every day of the year and by this means have so improved the size of the hens and of the eggs that they have now Leghorn hens weighing as much as a Plymouth Rock and eggs that weigh over three ounces or five eggs weighing a fraction of an ounce less than a pound. In that flock there are also ten pullets that have frequently laid two eggs a day and one pullet that on the ninth of February laid three eggs following on the tenth and eleventh with an egg each day, five eggs in three days. This would [illegible] een discovered but for the use of trap nests.



I have bought and tried and also made several kinds of nests and I find this one the easiest to make and the most satisfactory of any. There is no patent on it, for it was made at the government experiment station in Maine. Mrs. Pease and I made them ourselves from these plans without any trouble. fitting up cracker boxes with the trap door, but in case anyone does not understand the scheme, two of the poultry supply houses in Los Angeles (H. Albers Co., and S. H. Church) have made

Prussian Lice Killer

Easy, quick and certain riddance of vermin on poultry and animals.

"I have used the Prussian Lice Killer on my chickens and it is certainly the best I ever used. It is easily applied and it does its work in great shape. I will say to my fellow poultry keepers that they will save time and trouble by using Prussian Lice Killer.
Harry Rutledge, Dyer, Ind.

½ Gallon 50c. 1 Gallon $1.00.

Prussian Lice Powder

The dust method. Sure death to lice, no injury to birds or animals.

"I used a 25c package of the Prussian Lice Powder on 16 head of lousy cattle, and the day after could not find a louse. I consider it the best thing I ever saw." H. V. Spafford, Kelso, N.D.

In 25c and 50c Packages.

Prussian Poultry Food

Guaranteed to produce healthy fowls, more rapid growth, make better layers and to ward off and cure Roup, Gapes, Cholera, etc.

"We have used Prussian Poultry Food for more than two years with great success. We find that it is the proper food for young chicks and just the thing to keep up laying hens."
Arnold Jungman, Poultry Yds, Gladstone, Minn.

In 25c and 50c Pkgs. 25 lb. Pail, $3.50.

"Poultry Profits," 36 pages, to poultrymen free, if you write us what stock you own.

Prussian Remedy Co., St. Paul, Minn.

AGENTS: Vaughan Seed Store, Chicago, Ill. J. W. Wilder & Co., Cincinnati, O. Lee-Pioneer Seed Co., Denver, Colo. Portland Seed Co., Portland, Ore.

White Minorca and Buff Orpinton Eggs $1 per 13, $1.75 per 26.

Indian Runner Duck Eggs, 65c per 12, $4 per 100. All healthy and standard bred stock.

H. C. Boyer - *Toluca, Cal.*

Blue Andalusians

At Los Angeles, 1906, our strain in a class of 68 Audalusians with 16 birds won more firsts than all our competitors combined. Eggs, $2.50 and $3.00 per 14.

Blue Ridge Poultry Yards, 128 Avenue 32 Los Angeles

Brown Leghorn and White Rock Eggs

For Sale, $1 per 15, also two fine White Rock Cockerels at $2 each.

Willis F. Wiesmore, 835 High Ave., Redlands, Cal.

White and Buff Wyandottes

Prize-Winning, Egg-Laying, Wealth-Producing Strain.

M. E. DILLINGHAM, Bx67 San Gabriel, Cal.

SINGLE COMB WHITE LEGHORNS

Thorough-bred Stock. Eggs, $1.50 per 15

INDIAN RUNNER DUCKS

Eggs, 1.50 per 12.
Send for illustrated catalogue

John P. Boden 638 Second Street, Watsonville, Cal.

THOROUGHBRED YOUNG CHICKS

White Leghorns, 10c.
White Ply. Rocks, 12½c.

C. L. GREEN, Manager, ANAHEIM, CAL.

New Hatchery

Baby Chicks

White Leghorns, 10c each. Large orders a specialty. Eggs from fine, large thoroughbred stock. Terms cash. Order now.

Wm. A. Green, Azusa, Cal.

Home Phone 5184

EGG FOOD ACW IT FILLS THE BILL

IF YOU HAVE NOT USED

The A. C. W. Products for your poultry you have missed a good thing and your poultry have lost good food. This is an age of progression. We have learned much in the last few years and live in hopes of learning more. What we and others have learned in the art of poultry feeding we give you in **our** scientifically prepared and **practically** tested products.

The A. C. W. Chick Food is the talk of poultrymen. Then our goods are guaranteed pure, sacks sealed, too, and we stand behind the guarantee. **Money back** if goods not as represented.

Honesty is the best policy, and it pays. Come and see us personally at any time. We are always busy, but will take time to talk. show and explain. If your dealer has not our goods yet, give us his name and we will supply you direct.

We manufacture special pure Bone for Chickens, Blood and Meat Meal, Beef Scrap, etc, from U. S. Government inspected stock.

AGRICULTURAL CHEMICAL WORKS

Phones: Home 6063; Sunset, Boyle 3. 901-907 Macy Street, Los Angeles

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK

BUYS THE WORLD'S FAMOUS EGG FOOD NO. 4

MIDLAND

IF YOU WANT EGGS YOU WILL FEED NO OTHER

Used by all the largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the **GOLD MEDAL** at the St. Louis World's Fair for greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1604.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A FILCHER, Commissioner.

And Now Comes New Reward for Merit:

Read the following telegram received from the Lewis & Clark Exposition at Portland:

"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

PETALUMA INCUBATOR CO.

Main Office and Factory, Petaloma, Cal., Box F. Los Angeles, 505 South Main Street

San Francisco Office and Salesroom, 33 Market St.

Buff Wyandottes

Eggs from pens mated with 2nd prize Cockerel or 2nd prize Pen L. A. Show, $2.50 per 15. Stock and yards at San Gabriel. **Wm. J. Bodger, 251 S. Main St., Los Angeles, Cal.**

Blue Andalusians

From prize winning and egg producing strains. Eggs, $1.50 and $2.00 per 15; incubator lots, $6.50 per hundred.

C. E. Chittick, 124 Avenue 34, Los Angeles, Cal.

Beaumont W. Wyandotte and I. R. Duck Farm.

Eggs for hatching in Incubator lots. A few Wyandottes of Dustin strain to sell to make room. Prices on application. MRS. C. A. MCDONALD, Beaumont.

Buff Plymouth Rocks

A few fine cockerels $2.00 to $4.00 each. Eggs, $2.00 for 15. Very choice Eastern stock.

F. W. Tutin, Riverside, Cal.

Brown and White Leghorns

Prize winners at L. A. Show, '06. Eggs from good laying strains. Eggs, special matings, per 15, $2.00. Incubator lots, $6.00 per 100.

Hemet Poultry Yards, Hemet, Cal.

Eggs from World's Fair Buff Leghorns $3 per 13, $7.50 per 100, $5 per 50. Commissioners' Cup for best display California bred poultry at Lewis and Clark Exposition. ***Barred Rock*** eggs, $1.50 per 13. ***LINDGREN BROS., Kingsburg, Cal.***

BUFF LEGHORNS

Eggs for hatching from the famous J. W. Miller strain, Freeport, Ill. $1.25 per 15

CHAS. G. MILLER, 40 Elm St. WATSONVILLE, CAL

White Wyandottes and S. C. White Leghorns

Good layers. Trap nests used. Eggs: Wyandottes $1.50 to 2.50 per 15. Leghorns $1.50 per 15.

J. F. GOETTING, EL CASCO, CAL.

$12.80 For 200 Egg INCUBATOR

Perfect in construction and action. Hatches every fertile egg. Write for catalog to-day.

GEO. H. STAHL, Quincy, Ill.

WILLARD POULTRY FARM, HYNES, CAL.

Mrs. F. T. Hungerford, Manager

14 Ribbons at The Last Los Angeles Show.

Indian Runner Ducks' Eggs:—$1.00 per 13, $3.00 per 50, $5.00 per 100. White Minorca and White Wyandotte eggs:—$1.50 per 15, $4.00 per 50, $8.00 per 100. Eggs carefully packed and shipped any where.

BARRED ROCKS
EXCLUSIVELY
Send for 16-page 1905 Catalogue
H. R. CAMPBELL
Box O PETALUMA, CAL.

WHITE MINORCA EGGS

Best of Stock. Great Layers. $1.50 setting, $8 100, $65 1000.

S. W. MORGAN,
Sunnyside, San Diego Co., Cal.

Little Chicks Just from the incubator of the following varieties and prices:

White and Silver-Laced Wyandottes
$12.00 per 100
White and Barred Plymouth Rocks
$10.00 per 100
Black Minorcas $8 00 per 100 | **White Leghorns** $7 00 per 100

These are all from first class stock—none better at the above price. We guarantee safe delivery anywhere we can reach within 72 hours of San Jose.

J. S. SMITH,
Box 526 SAN JOSE, CAL.
Hatchery—450 W. Santa Clara St.

Get More Money for Your Eggs

TRADE KEEPS FRESH HAGER'S WINTER HEN EGGS FRESH MARK

Hager's Egg Preservative is unquestionably the only one on the market that will keep ***fresh*** eggs ***fresh.*** It costs ***only one cent per dozen,*** sold on a strict guarantee to do as claimed or money refunded.

Write today for booklet with full instructions and ***sample package.***

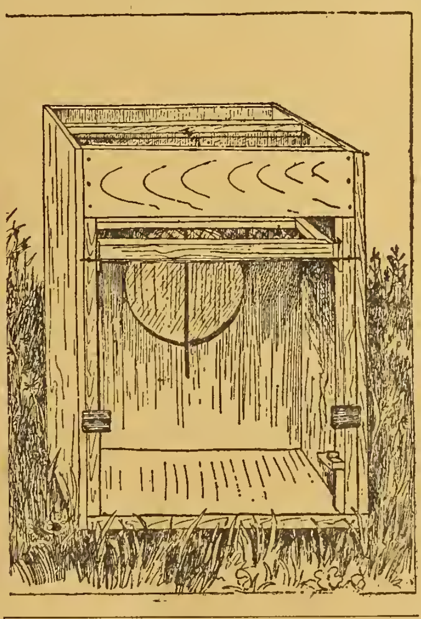
Hager's Egg Preservative Co.
St. Louis, Mo.

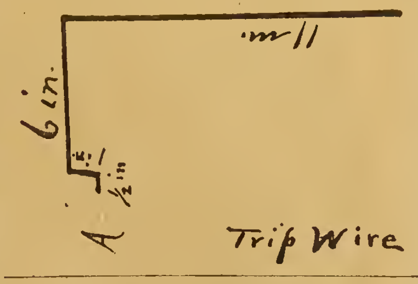
some and any one can see them or buy one as a model.

The W. W. Howard Co., have also a trap door which can be placed at the entrance of any box nest, and which I can recommend highly having tried it myself. It is patented.

There are a number of trap nest plans and also trap nests on the market ranging in price from one dollar to twenty-five. I have bought and tried several and find that the most satisfactory trap nest is one that has two compartments and opens in the front to take the hen off. In other words it must be comfortable for the hen and for the attendant.

The nest box here described was made by G. M. Gowell, agriculturist of the Maine Experiment Station, after a careful study of the various nest boxes on the market. and is intended to combine their excellences and avoid their defects. I can assure you that this plan which costs you nothing is far superior to most of those that are highly advertised and which cost at the cheapest one dollar for the plans.





This is the box that is illustrated here and the description is in Mr. Gowell's own words: "The nest box is very simple, inexpensive, easy to attend and certain in its action. It is a box-like structure without one end; and is twenty-eight inches long, thirteen inches wide. and thirteen inches deep—inside measurements. A division board with a circular opening seven and one-half inches in diameter is placed across the box twelve inches from the back. The back end is the nest proper. Instead of a close door at the entrance, a light frame of inch by inch-and-a-half stuff is covered with wire netting of one inch mesh. The door is ten and one-half inches wide and ten inches high and does not fill the entire entrance. a space of two and one-half inches being left at the bottom and one and one-half inches at the top, with a good margin at the sides to avoid friction. If it filled the entire space it would be clumsy in its action. It is hinged at the top and opens into the box. The hinges are placed on the front of the door rather than at the back or center, the better to secure complete closing action. The 'trip' consists of one piece of wire about three-sixteenths of an inch in diameter and eighteen and one-half inches long, bent as shown in drawing. A piece of board six inches wide and just long enough to reach across the box inside is nailed flatwise in front of the partition and one inch below the top of the box, a space

SHADE'S Rhode Island . . . Red Farm

Automatic Chicken Feeders.
Shade's Egg Food sold to consumers only.
San Bernardino, - - California.

Raise Every Chick

If every Chick hatched last season had reached maturity in 60 to 90 days—hardy, strong and vigorous—how much extra money would you NOW have in the bank?

You could have SAVED these Chicks—every one—if you had used

Purina Poultry Feeds

—for one kind—Purina Chick Feed, is made on purpose to save the lives of little Chicks, and make them grow like weeds. And it DOES IT. Brings up the highest percentage of every hatch EVERY TIME.

The other Purina Feeds MAKE EGGS—make your hens lay all the year 'round—make zero weather eggs EASY. They do this EVERY TIME, and with EVERY HEN, too.

These may sound like "broad statements."

But don't take OUR WORD for it—try it—prove Purina Feeds yourself by feeding them to YOUR hens or chicks at OUR EXPENSE. If the RESULTS don't come, just tie up the bag and write us, and we will return every penny of your money, and tell you what to do with the unused feed. You are not out a cent in making the trial, for we will supply you through your dealer or direct, FREIGHT PAID, and the feed used in testing will cost you nothing.

This is the Money Back line

Ask for particulars about our FREE TEST Plan. Write today—you can't afford to wait.

ACME MILLS CO.
PACIFIC COAST MANUFACTURERS
PORTLAND, OREGON

PURINA POULTRY FEED

Banning Poultry Yards

Wanted—To Exchange, 20 Barred Rock hens and 2 Barred Rock cockerels for same No. S. C. Wh. Leghorn hens and cockerels. Correspondence solicited. **Morris Bros., Banning, Cal.**

Mountain View Poultry Ranch

S. C. White Leghorns—Heavy layers. Eggs, $1.50 per 15, $5.00 per 100.

Indian Runner Ducks—Males for sale. Eggs, $1.00 per 13, $3.00 per 50, $5.00 per 100.

Mrs. J. L. Updyke - Fullerton, Cal.
Successor to Jacob Kreger

Single Comb White Leghorns
Winners of the Dodge Sweeney Cup

Best display White Leghorn in Sonoma County at San Francisco Exposition, 1905.

1st pen, $5.00 per setting; 2nd pen, $3.00 per setting. Eggs from free Range 5 cents above Chronicle quotations. Stock for sale.

A. H. M Davies, Western Ave, Petaluma, Cal

High Grade **S. C. Rhode Island Reds White Plymouth Rocks and Buff Leghorns**

All new matings this season. Some of the breeding birds personally selected by the owner in the east last fall. Strong hardy stock, bred to lay and to win. Our Reds won at San Francisco, San Diego and Los Angeles shows. Best eggs $2 00 for 15, $5.00 for 50. From good utility matings $1.00 for 15, $3.00 for 50.

Lake Avenue Poultry Yards
757 N. Lake Avenue - Pasadena, Cal.

When writing advertisers mention Cultivator.

Your Poultry Deserve

the best protection you can give them. Money spent to this end is good investment, for the increased egg production will repay you with interest. If you want best protection with least possible trouble, do as the owners of the Rosetree Poultry Plant did with the building pictured above—cover it with

Rex Flintkote Roofing

It is an absolute protection against snow, rain, wind, sun and danger from flying sparks. No paper or tar about it. Each roll contains full directions and everything necessary to its perfect laying. Any farm-hand can do it.

Send for Free Samples

With them you also get a book, showing all kinds of buildings, from poultry houses to railroad terminals and public buildings, which are to-day proving the superiority of Rex Flintkote over all other roofings under all kinds of climatic conditions. Beware of the "just-as-good" kinds that cost half as much to make, yet sell almost at the Rex Flintkote price. This trade-mark is your protection.

J. A. & W. Bird & Co. 89 India St. Boston
Agents everywhere

Poultry and Eggs Wanted

This sign you will see hanging outside of a merchant's store in nearly every town on the coast and it, in a measure, must convince you that there is money in the poultry business, and the

Chatham Incubators

will assist you in making money. Any responsible person can get a genuine **Chatham** and have SIX MONTHS TO PAY FOR IT—what is the use of you paying out money for an Incubator when you can make it pay over and over again for itself?

I can give you hundreds of testimonials from customers all over the Coast who purchased Chatham Incubators and Brooders last season on our **ON TIME PLAN**, and are thoroughly satisfied with them. The manufacturers fully guarantee every machine. Write me for our catalogue and some useful hints on poultry raising—it will be mailed to you free.

Geo. W. Foott, Box 2040, Portland, Ore.

Huskins' White Wyandottes
Prize winners for two years, 1905 and 1906, at L. A. Eggs for hatching from standard bred stock, $1.50 per dozen, or if you mention Cultivator, will send thirteen.
A. W. Huskins, 713 Waterloo St., *Los Angeles*

White Plymouth Rock Poultry Ranch
Eggs for hatching from First-Class Stock, $6.00 per 100, $1.50 per setting 15 eggs.
J. T. DAVIS, Prop. POMONA, CAL.

Blue Andalusian Eggs
$1.50 and $2.00 for 15, $7.00 per 100. Free range. I raised and sold cockerel winning first prize at late L. A. poultry show. Stock. ***Mrs. J. S. Duff, 3145 S. Hoover St., Los Angeles, Cal.***

White Wyandotte Eggs
For hatching. Pure Dustin & Hallack strain. From 1st Pen, $3.50 per setting, 2nd pen, $2.50.
Mrs. S. H. Church, 505½ S. Main St., Los Angeles

White Plymouth Rocks
Standard Bred. Eggs for hatching, 10c each. Incubator lots, $7.00 per hundred.
C. M. Johnson, Gardena, Cal.
Yards at Strawberry Park, on electric lines.

S.C. White Leghorns Indian Runner Ducks
Eggs, $1 per setting, or $5 per 100. Leghorns of McFarlane strain Fertility high, 80% guaranteed. ***J. E. Beadle, 901 No. St. Louis St., Los Angeles.***

Single Comb Brown Leghorns
Exclusively
Stock for sale and eggs for hatching. Eggs from first pen $2.00 per 15 eggs, second pen $1.50 per 15. Incubator lots for $6.00 per 100 eggs. They have always won first prize whenever shown. Large birds and heavy layers.
W. E. Mercer - - Ventura, Cal.

A POULTRY COLONY
NEAR LOS ANGELES HAS BEEN FORMED
for mutual benefits. Situation unexcelled; plenty of good water, splendid soil and close to town. Only a few acres left. Apply at once to
Anna L. Pinkerton
Realty Trust Company, 129 So. Broadway, Los Angeles, Cal.

Fairview Poultry Yards
SILVER LACED WYANDOTTES
Two pens, both headed by prize-winning cockerels; 1st at Los Angeles and 1st at San Diego. Four prize-winning females in pens. Eggs, $1.50 per 15.
WHITE PLYMOUTH ROCKS
Special mating, pen headed by Fairview Prince, a son of the best layer in our yards, $1.50 per 15. Five pens large MATURE hens mated to vigorous Cockerels, $1 per 15 eggs; $5 per 100. Eggs from these pens specially recommended for incubator hatching.
A. E. NELSON, EL MONTE, CAL.

Golden Crest Poultry Yards
White Leghorns—Eggs, 50c per setting, from pens of Petaluma's best laying strain. $3.00 per 100.
Barred Rocks—75c per setting.
Prize winning **White Crested Black Polish** my specialty.
Geo. H. Randall
C St., Santa Ana

30 DAYS TRIAL
Buy From Our Factory—Save One-Third.
PRACTICAL INCUBATORS positively the best. Hatches more and stronger chicks. 10 YEARS' GUARANTEE
Cat. free. PRACTICAL INC. CO., 720 S. 11th St. San Jose, Cal.

FOR SIX YEARS
Albers' Black Minorcas
Have led in the shows every year, and they lead all breeds in egg production ll the time. Eggs in large or small ots. Stock for sale. Circular free.
GEO. R. ALBERS
4849 MARMION WAY LOS ANGELES, CAL.

of one-fourth of an inch being left between the edge of the board and the partition. The purpose of this board is only to support the trip wire in place. The six-inch section of the trip wire is placed across the board and the wire slipped through the quarter inch slot and passed down and close to and in front of the center of the seven and one-half inch circular opening. Small wire staples are driven nearly down over the six-inch section of the wire into the board, so as to hold it in place and yet let it roll sidewise easily. When the door is set the half-inch section of the wire marked "A" comes under a hard wood peg or tack with a large round head, which is driven into the lower edge of the door frame. The hen passes in through the circular opening and in doing so presses the wire to one side and the trip slips from its connection with the door. The door promptly swings down and fastens itself in place by its lower edge striking the light end of a wooden latch or lever, pressing it down and slipping over it. The latch acts quickly enough to catch the door before it rebounds. The double box with nest in the rear end is necessary as when a bird has laid and desires to leave the nest, she steps to the front and remains there until released.

With one section only she would be very likely to crush her egg by standing upon it.

The boxes, which have no tops. are arranged in cases in groups of four and slide in and out like drawers (see fig. 4). They may, of course, be used singly, by simply providing a cover for each box. When a hen has laid, the nest is pulled part way out or the cover lifted. as the case may be. and the hen removed.

I have made nest boxes myself from these plans. I used wooden shoe boxes or cracker boxes and easily made two in a morning. The wire was a little difficult to bend, but a boy did it for me. One word of caution: It is well to have nests enough, because the hens must be coaxed to lay and when they get ready must not be kept waiting. If a hen is dissatisfied with her nest she may hold her egg for twenty-four hours and in time be taught to lay only every other day. It is wise to encourage the hens to lay and I have found these trap nests so cleverly invented by Mr. Gowell are much liked by the hens while others I bought and paid a big sum for, frightened the hens and prevented their laying. They were enclosed on the nest pushing their heads out and trampling on the eggs, breaking some and entirely defeating the object of the nest which is, "more eggs and better hens."

* * *

EDITOR'S QUESTION BOX.

Water Glass. (W. H. S., Toluca.) Will you kindly through the medium of the Cultivator, give me the following information?

Will eggs that have been stored in a solution of water glass keep for any length of time after being removed from the solution?

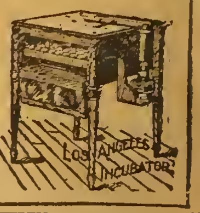
To prepare eggs for the market what has to be done to them after removal from the solution?

What is the best receptacle for keeping the solution? At present I use only earthenware jars. Can wooden casks be used safely, and coal-oil cans if carefully cleaned? Has water glass any action on metal?

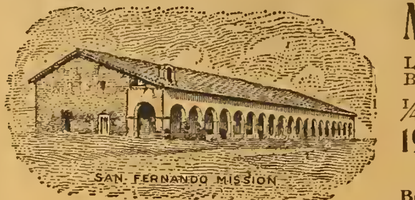
Answer. From personal experience I know they have kept well for ten

Standard Bred S. C. White Leghorns
EXTRA LARGE BIRDS AND HEAVY LAYERS. Eggs, $2 per 15; $8 per 100; $60 per 1000 from January until July only.
CAPTAIN MITCHELL SANTA BARBARA, CAL.
Author of "A Practical Poultry Plant for Southern California," $1.25 cloth binding, on sale by Calif. Cultivator

SUCCESS
IS ATTAINED WITH
LOS ANGELES INCUBATORS
SEND FOR CATALOGUE
LEE'S LICE KILLER EGG MAKER | LARGEST POULTRY SUPPLY HOUSE IN THE U. S.
HENRY ALBERS 315 S. MAIN ST. LOS AGNELES



Dean's Pacific is an Incubator built on scientific plans and has all the latest improvements. Every machine guaranteed. "Facts From Experience" and Catalog for the asking. Address ***Dean's Place, 2509 Central Avenue, Los Angeles.***



Mission View Poultry Ranch
Largest Breeder of WHITE WYANDOTTES on the Pacific Coast
¼ Wild Mammouth Bronze Turkeys.
1906 Winnings 32 Prizes Write for Circular Clear Eggs Replaced
MRS. C. D. HUBBARD,
Box 282 San Fernando, Cal.
White Wyandotte Stock for sale, $1.50 and up.

Emery's Pure Meat Meal
Don't believe all we say, but just enough to buy our Poultry Foods
Ask your nearest dealer for them and take no imitations
Emery's "B. B. & B."
THE PACIFIC GUANO & FERTILIZER CO. Successors to N.Ohlandt & Co San Francisco, Cal.

Setting Eggs For Sale
As follows: Mammoth Bronze Turkey, White Pekin Ducks, Black Minorca, Blue Andalusian, Buff Orpington, Buff, Barred and White Rocks, White and Brown Leghorns. Prices range from $1.00 to $3.00 per setting.
H. H. HOLLAND, EL ORO POULTRY FARM,
Fresno, California.

West Coast Chick Feed
A perfectly balanced ration for the growing chicks. All pure food, no filler, no waste, hence cheapest. Keeps them growing and healthy. Made by
WEST COAST STOCK FOOD CO.
818 San Fernando St. (through to Alameda) Los Angeles, Cal.

SAM'L R. KELLAM, President of the L. A. Co. Poultry Association, says: "West Coast Chick Feed is the best feed for young chicks I have ever used."

MRS. A. BASLEY, the celebrated poultry authority says: "I want some more of your West Coast Chick Feed for it is excellent. It is purer, cleaner and appears better balanced than other feed I have been using, and to tell you the truth I have been experimenting feeeding both together and they always eat yours in preference."

S. M. BUTLER, Lamanda Park, the well known poultry judge and successful breeder, says: "I want to say that too much praise can't be given West Coast Chick Feed for growing Chicks."

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MARDEN EGG FARM
HYNES, CALIFORNIA
Breeders of S. C. White Leghorns Exclusively
Fine Feathers alone do not make the profitable hen. Our fowls have the reputation of being ***extra large, handsome*** and ***extra heavy layers.*** Last season, our eggs averaged over 95 per cent. fertile. ***Remember***—In getting eggs from us, you do not get them from the general runs. We have but one grade of eggs to sell for hatching and those are from our breeding pen composed of only the choicest fowls, selected from hundreds that are ***bred to lay.*** Hens that approach the ***200 egg record.***
Price of Eggs—$1.50 per 15, $5 per 100. ***Send for Illustrated Catalogue. Address,***
LEO. W. MARDEN, Manager

days; how much longer they would have kept I cannot say.

Rinse them in cold, clean water. You can also wipe them dry.

The government reports advise earthenware jars. The eggs can also be kept in the silicate solution in wooden kegs after thoroughly cleaning and scalding the keg. Tin cans are not so good for they turn rusty and the solution becomes dark like iron water; this might color the eggs. The first eggs I kept were in oil cans, but I did not like the rusty appearance. The eggs kept well for nine months when we finished eating them.

* * *

Blue Andalusians. (L. S., Pomona.) Can you tell me what the markings of the pure bred Blue Andalusians are? Why do the eggs from an all blue hen hatch out a white chick or one with blue and red feathers mixed? Are they pure bred when they hatch out off-colored chicks. Please give me information on this point.

Answer. The plumage of these beautiful fowls is a light, slaty blue, laced with a darker shade of the blue, which should stand out cleary and sharply, the desired contrast being pronounced and well defined. This breed has the unique distinction of wearing the national colors, the red white and blue, having red comb, wattles and face, with white earlobes and blue plumage. The origin of the breed is not known, but it is supposed to have originated in a cross between the black and white Minorcas, whom it greatly resembles in shape and general characteristics. The chicks when first hatched out are often of divers colors, but usually when they get their full plumage are blue, although occasionally one will take back to the original ancestor and be black, white or partly colored.

* * *

Hen Houses. (L. P. L., Pasadena) From studying the Cultivator regarding the care of fowls, I find that to succeed in having healthy chickens largely depends upon their night quarters. but I have seen nothing as to how to build the houses, as to ventilation, space given. and how constructed. I should be glad (and perhaps might) to see something on this subject.

I want to build a house to hold thirty chickens. Can you give me a plan for a cheap house?

Answer: In planning a house for fowls in this climate we must remember that what fowls require most is fresh air. without any draughts.

To secure this the house must either be entirely open on one side or open at the bottom from six to ten inches all the way round.

To make a house open at one side or a "fresh air" house, as well call it. is very simple; I saw some very satisfactory houses at O. S. Hoffman's at San Jacinto; they were made something like the accompanying plan. At the bottom on all sides for two feet deep they were boarded, this was to keep in the straw. Above these two boards were panels of ruberoid which fitted into two slots (or buttons) at the edge of the boards and were held in place by two buttons at the roof. These panels were taken down every sunny day to air and sun the house. The lowest side. or it might be called the back of the house is open at night and day, except when the rain is beating in, when a burlap curtain is lowered. The dropping boards are four feet wide. the perches placed six inches above them. The whole floor is used as a scratching pen. This is one of the cheapest and best houses I have seen.

The "mushroom" house is also very good; it is a small house that stands up on four legs from six to ten inches above the ground. You can make a frame of almost any shape or size and cover it either with shakes, ruberoid, canvas, burlap or even with domestic muslin, oiled and make a fairly good house. I have used both these myself and prefer the first house. Mine are made of matched lumber instead of ruberoid.

Mr. Hoffman has used the ruberoid for two years and likes it.

The house nine feet by fifteen is divided in the middle by chicken wire so as to form two houses. You will find it better to divide your thirty hens into two colonies.

* * *

Turkeys. (Mrs. D. J., Sespe.) I set incubator with 86 turkey eggs. tested out three and run incubator like for hens' eggs. Only hatched 33 poults, and part were weak and some crippled; now can you tell me what was the matter? Other eggs laid at the same time, set under turkey hens hatched well and little ones all stout and healthy. I saved thirteen in brooder until two weeks old, when they died. What was the matter?

Answer. I am very sorry for your disappointment about your turkeys. It is such a grief to have a poor hatch when one has been counting on a lot of turkeys. It would be almost impossible for me to tell you why your incubator did not hatch. I have a letter from another lady, who says: "By your advice given three years ago, I got a small Cyphers incubator and find it will hatch every fertile egg." I therefore conclude the fault must be in the incubator, especially as you say the eggs under hens hatch well. The usual reason for cripples among chickens is irregularity of heat in the incubator, or too great heat the last week. You do not even give me the name of the incubator.

The little ones that you let run by the ditch evidently were very hungry for green food and either over ate of it or partook of some weed that disagreed with them, and may also have wet their feet or the sudden change to perfect liberty and the change in food all combined had a fatal result. You cannot be too careful about sudden changes in food or management with turkeys.

SMALL CHICKEN COOPS.

L. P. L., Pasadena, will give you an answer and plan of small chicken coop next week.

* * *

IT'S DANGEROUS.

Editor Cultivator: Is corrosive sublimate a safe thing to use as a lice killer in chicken cooks?—Mrs. G. C., Modesto.

Answer: Corrosive sublimate is a very virulent poison and dangerous to have around. Lee's Lice Killer will reach the same results, though slower in action, of course, but not so dangerous to handle.

S. C. WHITE LEGHORNS
I can furnish you with first-class eggs that will hatch strong, vigorous chicks, and give you satisfaction. $2.00 per 15, or $7.00 per hundred. Stock for sale. All eggs and stock purchased of me shall give perfect satisfaction. I make this a point.
Monte Vista Poultry Farm
L. D. Pettit, Mgr. Corning, Cal.

SONOMA-AMERICAN INCUBATOR
Send for large circular fully describing these machines.
Sonoma-American Incubator Co., - Petaluma, Cal.

EGGS FOR HATCHING
from a heavy-laying strain of
SINGLE COMB WHITE LEGHORNS
I guarantee 100% fertile. Write for prices.
Golden State Poultry Yards, Lordsburg, Cal.
T. E. Mills, Prop. Home Phone 1720

$8.00 COCHINS $8.00
A Trio—Buff, Black or White
Send for circular, giving undefeated show records. These are the best winter layers, finest table fowls. and by far the most healthy and hardy. Eggs, $2.00 per setting of 15. Prize winners, Eggs, $3.
HARRY McINTIRE,
SAN DIEGO, - - - CALIFORNIA.

Buff and Black Orpingtons
Buff and Brown Leghorns
Indian Runner Ducks--Bronze Turkeys
Eggs and Young Stock in Season
W. W. Bliss - Duarte, Cal.

Chickens and Eggs
Having handled Poultry in this market for the past thirty years, we can give you the best results and prompt returns.
D. E. Allison & Co., Inc.
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Standard and Line-Bred Barred Plymouth Rocks Exclusively
Ocean, Blue, Thompson Ringlet and Arrowhead strains. Eggs for hatching, chicks for sale. Winners at the 1906 Los Angeles Show.
S B. WOLFE, 1549½ W. 16 St., Los Angeles. Phone West 4901

Buff Orpington and Barred Rock Eggs
for hatching from pure bred stock at $1.00 per 14.
Mrs. Albert Miller,
Tel. East 1767. Station A, Los Angeles, Cal.

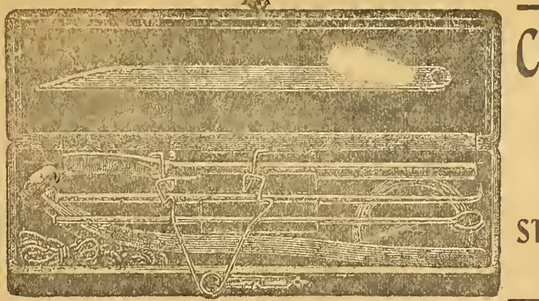
BRONZE TURKEYS
Hart's strain. Winners of five firsts at Los Angeles Show, '06, and always winners wherever exhibited. Write for prices.
Ed. Hart. Clements, Cal.

White Wyandottes.
High scoring stay white birds. 1st Cock L. A. 1906 show and other winners. Eggs $1.50 to $3. per 13. $10.00 per 100. Mount Holly Poultry Yards, Hollywood, Cal. E. W. Preston, Prop., Sunset, Hollywood, 901.

Start Right.
Here is an opportunity to procure some A. 1 stock for beginners in the poultry business.
We have a limited number of choice hens of the single comb White Leghorn variety a year to one and a half years old at $15.00 per dozen and upward.
A fine selection of S. C. White Leghorn roosters at $2.00 and upward each. A limited number of fine S C. White Leghorn pullets 5 to 6 months old at $15.00 per dozen.
We not only manufacture incubators, Brooders and all kinds of poultry supplies but we are the most extensive hatchers of chicks in the world.
Write for prices on chicks.
Write for our New Illustrated Catalogue B.
MUST HATCH INCUBATOR CO.
Petaluma, California.

THE FEATHERLEY FARM ORPINGTONS
Over 30 prizes, specials and cups in **Buff, Black and White Orpingtons** on 27 entries this year at San Francisco, San Diego and Los Angeles. Bred for utility and egg purposes, as well as prize winning qualities. Eggs from $2 to $3 a setting. Write for free mating list, describing my ten prize yards.
P. L. Harley, Box C, Redlands, Cal.

WHITE WYANDOTTES
200-250 Egg Fowls
16 Prizes San Francisco
Scored by T. E. Orr, eminent Eastern Judge. Our "Cream of the Coast" White Wyandottes swept the deck at San Francisco. Unsurpassed as layers and as exhibition birds.
Beautiful Circular Free, giving pictures of our prize winners, description of our matings and prices. Settings and Incubator Lots; Pens and Cockerels.
Eggs, $2.00, $3 00 and $5.00 per 15. Per 100, $7.00, $10.00 and $15.00. Clear eggs replaced. **We prepay express.**
CAPITOL AVENUE POULTRY FARM
A. L. R. MANTZ Rural 21, Box 98k SAN JOSE, CAL.



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Complete with Instructions, $2.50, Postpaid
STOCKMEN'S SUPPLY CO
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"Nothing Just as Good"

World's Chick Feed of To-Day. The only original **Dry Chick Feed.** All others are worthless imitations. **Chamberlain's Perfect Chick Feed** was used exclusively at the great St. Louis World's Fair during the 7 months. This the highest compliment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.
CHAMBERLAIN'S PERFECT MASH EGG FEED,
THE WORLD'S GREATEST EGG PRODUCER.

"Nothing Just as Good"

GERMAIN SEED CO.,
Pacific Coast Agents. LOS ANGELES, CALA,
SPECIAL PRICES ON TON LOTS.
Distributing Agents: FREDERICK BROWN, San Jose; CHAS. H NEARPASS, San Diego; CHANNEL COMMERCIAL CO., Santa Barbara and Ventura.

MISCELLANEOUS NEWS NOTES

The Central California Press Association held a largely attended meeting at Hanford last week.

The Pasadena board of education has issued an order abolishing all fraternal societies in the schools of that city.

At the last municipal elections in Southern California held last week nearly all incorporated towns voted no license.

The Library Board at Covina is to lay out the library grounds on an improved plan and decorate the same with trees, plants and shrubs.

The Ledger says a steel plant costing $5.000,000, which will give employment to 5.000 men, will be built at Tacoma the present season.

The city of Lemoore. in Tulare County, is going to oil its streets, and has made a contract for the work to be done for $1.10 per linear foot.

The Board of Supervisors of Tulare County has ordered the sum of $10 to be paid for the conviction of any party who mistreats children or animals.

J. B. Lankershim of Los Angeles has placed a contract for three and one-half miles of gum trees along his property line from the top of Cahuenga Pass to Leiberts Canyon.

Highway contractors in Santa Cruz County are experiencing great activity at the present time and permanent road building is to be the county slogan for the future. Good.

The Santa Cruz Board of Trade has been working to keep the fishing streams of the county, which are being held as private preserves, free to all nimrods.

The Visalia Delta says that the marble of which a twenty-two story building is to be erected in San Francisco will come from a quarry at Three Rivers, not far from that town.

Through the efforts of the club, the supervisors of San Diego County have voted $2000 for repairing the Coast road. Work will begin as soon as possible, and carried up to Oceanside at once. Beyond there it will be pushed to the Orange County line as fast as the funds become available. Orange County will try to have a good road all the way down the coast to San Diego.

A PRESS OF MERIT.

The manufacturers of the New Century Hay Press evidently believe they have the best press on the market. If they were not certain, it is not likely that they would make the liberal offer to prospective buyers that they do. Their offer is to pay the railroad fare of any hay press seeker who comes to Los Angeles and buys any kind of a press on sale here, provided they are given a chance to show their press. This is a bona fide offer with no strings to it. They believe they have the best press on the market and are willing to take the chances of demonstrating to any prospective hay press buyer that their claim is true.

The New Century Press is now in its fifth year and has passed the experimental stage. It has the largest sale of any press on the Pacific Coast where the grass is long and hard to bale, thus proving that it is as its makers claim, the strongest press on the market.

Owing to the great pressure necessary to make neat bales and to make the baling of hay profitable, the power mechanism of a hay press is one of its principal features. In the majority of presses it is necessary to have a strong, clumsy, heavy pitman. the head block being pushed into the baling chamber. On the New Century a one-inch steel rod takes the place of a pitman and the power is applied to the block head by a pulling instead of a pushing. This rod has a tensile strength of 35,000 pounds. The catalogue, which the manufacturers of the New Century will send to any person desiring one, will explain and illustrate the merits of this plan more fully. A large stock of New Century Presses are kept at Los Angeles, but all correspondence concerning the press, should be addressed to the WESTERN STEEL & WIRE CO.. Kansas City, Kansas.

The Pomona Progress says the city trustees are discussing the necessity of oiling and caring for oiled streets in that city, and a "smoother" has been purchased to be kept running on the newly oiled streets.

A herd of 100 2-year-old elk to be distributed in the forest reserves of the San Bernardino, San Gabdiel and San Jacinto mountains the coming fall by the government is the statement given out by Forest Supervisor T. P. Lukens of Pasadena in an interview at Redlands.

A company of business men of Delano have purchased the Tyler warehouse in that town and have built another warehouse of equal size in anticipation of the big wool crop this year in that section.

An oyster shell nine inches long eight inches wide and three inches thick perfectly preserved was unearthed near Ukiah last week. The Times says: The place where it was found is 1900 feet above sea level and it was imbedded in sand stone. According to geological chronology it is at least 10,000 years old.

THE WAY TO GET READY FOR HARVEST

If you grow grain or grass of any kind, you are invited to call on any dealer who sells one of the *International Line of Harvesting and Haying Machines* and get one of the new 1906 catalogs. You will find it well worth your while, for it's full of good grain sense—harvesting talk that means *bigger profits* for you.

While you are there, take a few minutes and look at one of the harvesting machines itself.

You will find that it comes up in every way to what your ideal of a *good* harvesting machine ought to be.

It is *convenient*—easy on you and easy on your horses—because it embodies every labor-saving, draft-reducing device that the most expert mechanical skill of the past 50 years has produced.

It has *large capacity*. There is no wasted energy about it. It allows you to do the work of harvesting "in a hurry."

It is *dependable* because it is made right. The materials used in it—the steel, iron and lumber—are the products of the manufacturer's own mines and mills and are right in every particular. There is no "guess work" about them. They are tested before used.

It is an *economical* machine because it saves all your grain; it saves time; it saves labor; it saves repair bills; it saves worry and trouble.

If a machine is *right* in its design, *right* in the materials used in its construction, *right* in its workmanship—it comes pretty nearly meeting every requirement you can make of it.

Convenient—trustworthy—economical. What more can you ask of a harvesting machine?

* * *

This question of harvesting means much to you. A half day's delay may make the difference between profit and loss on your crop.

The grain a poor machine or a worn-out machine *wastes*, is just so much from your profit.

It's too late now to reduce the *cost* of growing the crop—too late to *increase* the yield—your only chance is to get it *all* in the harvesting and to get it at the least expense of time and money.

If you grow grain, you need a *good* harvester.

If you grow hay, you need good haying machines.

It is economy to get the *best* you can find.

International dealers have them.

Champion Milwaukee
Deering Osborne
McCormick Plano

Go to the dealer and see for yourself.

If you don't know him, write to us for his name and address.

International Harvester Company of America, Chicago
(Incorporated)
WESTERN GENERAL AGENCIES: Denver, Colo., Portland, Ore., Salt Lake City, Utah, Helena, Mont., Spokane, Wash., San Francisco, Cal.

INTERNATIONAL LINE.

Binders, Reapers, Headers, Header-Binders, Corn-Binders, Corn-Shockers, Corn-Pickers, Huskers and Shredders, Corn Shellers, Mowers, Hay Tedders, Hay Rakes, Sweep Rakes, Hay Loaders, Hay Stackers, Hay Balers, Knife Grinders, Gasoline Engines, Pumping Jacks, Manure Spreaders, Weber Wagons, Columbus Wagons, Bettendorf Wagons and Binder Twine.

Remember:

There's a good old proverb about the impossibility of making a silk purse from a sow's ear.

It is equally impossible to make a good machine from *poor* materials—or unsuitable materials.

And likewise impossible to make a good machine even from *good* materials, without proper skill and proper facilities.

Every farmer knows how much harder it is today to get good lumber than it was 20 years ago.

Every manufacturer knows how difficult it is to get other materials of exactly the right kind at exactly the right time.

It was to overcome these difficulties that the several manufacturers of the various machines comprising the International Line, co-operated with each other in producing their own raw materials.

They cut and saw their own lumber, in their own forests; they dry it in their own kilns, and they have it ready when they need it.

They mine their own iron and coal; they make their own coke and steel, and they produce much of the other materials used in their factories.

The result is that they do not have to try "to make a silk purse from a sows's ear." They have the *proper materials* at hand, when they need them.

Nor is that all. The International Line of machines for harvesting and haying embraces *only* machines which have stood the test of time and bear the stamp of approval of the American farmer.

Consequently there is always a good demand for them, and this demand makes possible the employment, in their manufacture, of the most expert workmen and the best facilities that the mechanical genius of the world has produced.

It is these things that make the International machines so satisfactory to the user.

Queries and Replies

FERN TROUBLES.

Editor Cultivator:—Will you please inform me through your paper what causes the new leaves of a sword or Boston fern to curl? They seldom grow more than a few inches high and are always deformed; also what causes the soil to form a greenish moss all over the top of pots? Is it too much water, the use of cow manure, bad soil or the lack of something? The plants do not grow as fast as they should; possibly it is this that dwarfs the ferns. Is the iron rust from tin cans injurious to plants? I have quite a little green house and have been anxious for some itme to hear from good authority on the above.—F. A., Healdsburg.

It is evident from the presence of green moss that pot drainage is not good with your ferns. No doubt the soil has become sour, for the plant being in an unhealthy condition, does not take up much of either food or drink. Correct the drainage, allow soil to get pretty dry and give a good soaking with lime water so that it will leach through. Iron rust from tin cans is seldom injurious to plants, especially the rank-growing ones.

STRAWBERRY TROUBLE.

Editor Cultivator: Will you please tell me what ails the strawberry plants I send you. I have many affected in this manner.—O. C. H., Los Angeles.

These plants were sent to Prof. R. E. Smith, of the State University who replies as follows:

"Regarding specimens of strawberry received from you recently, would say that they are covered with the growth of a plant organism of very low order, not exactly a fungus, but what it called a Myxomycete. This group stands at the very bottom of the vegetable kingdom, being also known as the Slime Moulds.

The form occuring on the strawberry is probably not at all parasitic, but grows on any moist surface during wet weather. It will not actually attack the strawberry plant nor cause any serious trouble. With dry weather the growth will disappear. Some fruit may have been moulded during wet conditions, but the grower may feel sure that this is not a serious matter or in any sense a condition which is likely to continue."

KEEPING TABLE GRAPES.

Editor Cultivator:—Please tell us the simplest way of keeping table grapes through the winter for table use?—J. B. M., Imperial.

Mrs. Sherman of Fresno answers the above as follows: Cut off a good piece of cane, say four or five inches on each side of bunch and hang it up in a cool dry place. Sometimes we have grapes until March. The French have a way of sealing one end of the cut cane with sealing wax and putting the other end into a bottle of water.

LEAF EATER.

Editor Cultivator: I find on my vines a black bug, something smaller than a lady bug; they are eating the leaves and new shoots; can you tell me how to get rid of them.—A. R. C., El Centro.

The treatment usually is as follows, in a large vineyard. the dust method is cheapest. Often these infrequent pests are merely let alone, and next season the borders or weedy growths that harbor the eggs and grubs are cleaned and burned off.

Remedies: 10 pounds of sulphur; 1 pound of buhach; blow on the foliage with bellows, or use Paris green, 1 pound to 10 pounds of flour; apply either of these when the leaves are damp. If very dry spray the foliage with cold water or else sprinkle with a whist broom over the leaves. A spray of whale oil is also good, one-third of a pound of sulphur is boiled ten minutes in a gallon of water, to this add a pound of whale oil soap and one ounce of lye or soft soap. Boil five minutes more, then reduce with two gallons of hot water, apply with a fine spray nozzle while warm.

GLOBE ROSE.

Editor Cultivator: I mail you today in separate package a slip from a shrub growing in my garden, and would be much obliged to you if you can give me through the Cultivator the proper name for it. It is sometimes called the "Yellow Rose." but that name is somewhat of a misfit for it.—Inquirer, Santa Ynez.

Your shrub is Kerria Japonica, belonging to the rose family (Rosaceal) and known as "Globe Flower" or "Japanese Rose."

TESTING MILK.

Editor Cultivator: Please tell me what other way there is of testing milk besides the Babcock that can be depended on.—J. P. C., Modesto.

We know of no other tester as reliable as the Babcock, although we have heard that in Ohio a new tester has been made. It is as yet untried, we believe.

Every farmer needs a water tank and should have the best to be obtained. A galvanized steel tank costs but little more than the wooden tanks and certainly lasts enough longer to make it the cheapest in the end. No leaks and no driving down the hoops after a few days of warm weather. It is cleaner and far better than wood in every respect. The J. F. Holbrook Co., 310 S. Market st., Los Angeles, are making the only corrugated galvanized steel tank made in California and they will be pleased to mail catalogue. description and prices. Shipped to any point on the Coast.

Driver, Aber & Co., San Leandro, Cal., manufacturers of "The Boss Ladder," ship them all over the state, freight prepaid. Their advertisement appears in this issue of the Cultivator.

"THE BEST LIGHT ON EARTH."

This statement excepts sunlight, of course, but from all we are hearing the Superior Acetylene Generators are producing results (which should be most gratifying to the manufacturer as well as assuring to customers. We are pleased to call attention to the Superior Light and Heat Co., whose ad. apears on page 347 of this paper.

100 Chick Brooders
150 Chick Brooders
200 Chick Brooders

"Old Trustys" Train Wrecked

Low Prices as Long as they Last—Investigate

The Salt Lake Railroad held our car of Old Trusty at the scene of the washouts in Utah for 22 days. The delay has lost us many sales. In order to move this carload quickly while we are settling with the railroad company we will make you very low prices on the Old Trustys, delivered to you anywhere. Investigate, that's all we ask. Never again will you get this price; buy now and save money. Get the catalogue, 124 pages—it's free. Send yonr name, that's all. Free trial to all in your own home with the Old Trusty.

McClanahan Company, 711 So. Main St., Los Angeles, Cal.

FOR CLEANSING MILK CANS, BOTTLES, AND ALL DAIRY UTENSILS

AS WELL AS ANYTHING IN THE KITCHEN OR LAUNDRY 20 MULE TEAM BORAX

Is Unsurpassed. Sold by all dealers in Packages. ☞ Send for Free Sample.

PACIFIC COAST BORAX CO., 114 Sansome St., San Francisco, Cal.

Crimson Winter Rhubarb for Sale

From seed bed, nice plants. $2.50 per 100 free by mail; not less than 50 sold.

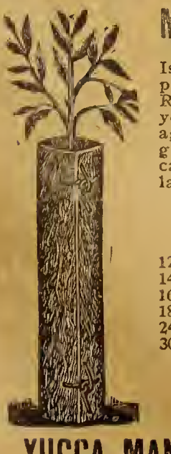
Belvidere Nursery, Box 168 Redondo, Cal.

IWANS' POST HOLE AND WELL AUGER

Best earth auger in the world. For Fence and Telphone Post Holes, Wells, etc. Three times the work accomplished with an Iwan Auger than with any other. Makes hole smoothly and quickly; empties easily; is very durable. Used by U. S. Gov't. 3, 4, 5, 6, 7, 8, 9 and 10 inch, $2.50 each; 12 inch, $6.00; 14 inch, $7.50. Sample at special price to introduce. Agents Wanted. Inquire of dealers or write direct for particulars. IWAN BROS., Box. A, Streator, ILL.

THE "BOSS" TREE PROTECTOR

Made of Yucca Palm



Is cheap, durable and quickly put on the tree. It prevents Rabbits from destroying your trees. A sure protection against frost, sun-burn, grasshoppers or dry winds. can be easily removed; will last for years.

Send for samples.

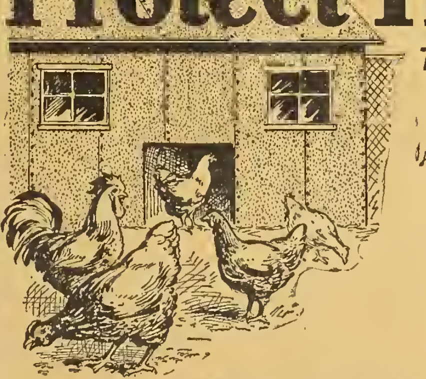
PRICES

12 inch long, $ 9.00 per 1000
14 inch long, 10.00 per 1000
16 inch long, 11.50 per 1000
18 inch long 12.50 per 1000
24 inch long 15.00 per 1000
30 inch long 17.50 per 1000

Agents Wanted Everywhere

YUCCA MANUFACTURING CO.
2124 Willow Street Los Angeles, Cal.

Protect The Hens



To Raise Fine Birds

You must first of all provide comfortable quarters.

Profitable Egg Getting...

success in poultry business demands it. It is not necessary to invest a fortune in your poultry house. It is not necessary to build a heavy expensive poultry house.

Use for the Roof and Sides the genuine

Pioneer

Rubber Sanded Roofing

Makes a Light Structure—solid, strong and absolutely weather-proof. That wear-proof surface of hard flint sand means years and years of extra wear without additional cost. Send for samples and prices.

Our complete Roofing Guide "D" will tell you about every class of Roofing and Building Paper for every purpose. Send for it to-day.

PIONEER ROLL PAPER CO.
Los Angeles, California.

Household Department

A SLOW RAILROAD.

The Nevada and California Railroad wanders about a bit in the mountains and its trains go at a leisurely rate. says the New York Tribune. A mining man who travels the road much tells of the illuminating incident regarding an Eastern visitor on the train. "He called the conductor," relates the miner, "while he was passing down into the aisle, and said:

"Conductor, how far it it to Hawthorne?"

"Fifty miles," said the conductor.

"Only fifty?" repeated the passenger. You been on this road very long?"

"Twenty-five years," said the conductor.

"Is that so?" said the passenger. "Is this your second trip?"

"Then the conductor wanted to fight.

APPEARANCES DECEPTIVE.

In the town of Newbury there lived a man named Nathan Hoobs, who sometimes drank more than was good for him. One cold moonlight night two deacons were walking home from prayer meeting. Hoobs was just ahead and heard them coming. In a minute he was down at the roadside where he lay like a log.

The deacons rolled and shook him, but he didn't move.

"Well." said Deacon Smith. "what are we going to do? We can't let him lie here and freeze, and we can't carry him home; that wouldn't do."

"I'll tell ye," said Deacon Moare, "we'll take him up to Mr. Flint's barn."

So one took his feet and the other his shoulders, and they began their up-hill walk, wheezing and puffing away. Twice they laid him down and nearly concluded to let him lie there, but finally they reached the barn. They tugged him up into the haymow and let him down.

"There," said Moare, "I believe we have done our duty. Certainly he won't freeze, an' I dunno but it's going to take a week to sober him up." And the deacons started for home again.

"Hold on. gentlemen," shouted a voice. They turned. and there in the moonlight they saw Mr. Hoobs walking with rapid strides toward them.

"I want to thank you gentlemen for your kindness." he said, "and if you don't mind I'll walk along with you."

The deacons became suddenly mute. and the silence seemed to be getting so painful that Mr. Hoobs decided to take a short cut for home across the fields.

MARRYING FOR MONEY.

When Mr. Jephson was thinking of marrying a girl "with money," his friend Rogers advised against it for reasons which he was quite ready to give, says the Atchison Globe.

"My boy," he said, "before I was married my wife inherited $500 from her grandfather. The whole town knew it. When I built a store, they smiled.

"His wife's money."

"After a while I took stock in the new gas and electric company.

"Aha!" said the treasurer. "I see you are investing some of your wife's money."

"All my life that poor little $500 has received the credit for every thing I have been able to achieve.

"As a matter of fact. my wife spent the money the day she got it for a diamond ring and a piano. She lost the ring a week later. and I guess some of the neighbors have wished heartily that she would lose the piano.

THE AMENDE HONORABLE.

A Washington newspaper correspondent says that Colonel Henry Watterson once told him he had always made it a rule never to make retractions. holding that the paper should assume that no mistakes were made, says Lippincott's.

In this connection. Colonel Watterson said that one day there appeared in the columns of the paper the obituary of a man tolerably well known in Louisville. The deceased appeared the next day in person. and. naturally enough, demanded a retraction. Colonel Watterson, with great sauvity, explained to the unfortunate gentleman that the paper never made mistakes and never corrected alleged errors. At this the subject of the obituary waxed exceeding wroth and demanded satisfaction..

Colonel Watterson then informed him that the only suggestion he could think of would be to place the gentleman in the birth column—as a new arrival, so to speak.

HOW A MISTAKE OCCURRED.

A. G. Hales, the war correspondent, writing in London Opinion and Today on the unequal talent to be found in the house of commons, tells a story he heard of a coxcomb who was once mistaken for Bernard Shaw. He and Mr. Shaw were once in the same Turkish bath, lying on the slabs, with towels over their faces. The attendant came along and touched the coxcomb on the shoulder. "Ready, Mr. Shaw?" he said. The coxcomb bounded to his feet, all aglow with pleasure at being mistaken for a man of intellect. After he had been rubbed down he gave the attendant half a sovereign for so full was he of the pride that goeth before a fall. As he turned to go he said. "Er—my man—er—what made you mistake me for Bernard Shaw?" The attendant grinned. "Er—well, sir. you see. sir, you 'ave the same sized feet."

A WOMAN'S CHANGE OF HEART

Editor Cultivator: In Januarv. 1902, my husband bought 20 acres of land in the Fernando Valley, seven miles from the pretty village of San Fernando. I thought it a dreadful thing to move out of the city onto a little farm away from people and things I had been used to so many years, and I had a good cry. woman like, before we moved and after we made the change. The place was really a pretty one when we took possession, it had many varieties of flowers. there were trees. the house needed painting but it was comfortable; the out-buildings were run down a bit and the road leading to town was not very good. I had not handled chickens for 20 years, except to dress them, and had no experience in raising them in California.

But it seemed to be a question of better health for my husband and our daughter and I accepted the situation cheerfully and even interestedly and went to work to do the best I could. As all my women friends know, hired girls are difficult to get and keep in the country and I found very soon that I had myself to depend on most of the time. We had a hired man, of course, and he had to be fed as well as the family. The work became very laborious the first three months, but I stuck to it and with what my twelve-year-old daughter could do we got along quite well. I bought a half dozen Plymouth Rock hens, began setting them as they wanted to nest. My husband subscribed for the Cultivator and I became interested in Mrs. Basley's poultry articles and the more I read them the greater my interest in chickens grew. Well, to shorten the story, in less than a year I had 50 chickens. I lost but six of them and I sold enough eggs in the winter of 1895 to pay all the expenses of the brood all the time I had it, besides furnishing the table with eggs. We bought two Jersey cows and made butter, the butter money my husband gave to me and I used it and the eggs to "fix up" the house. buying garden and yard plants and to tidy up the fences around the house and to beautify the surroundings.

You would not know the place today Husband "got busy" on the out-build-

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St. Louis	30.00	St. Joseph & Atchison	25.00
Galveston	26.45	Council Bluffs & Omaha	25.00
Dallas, Houston and Fort Worth			25.00
Nearly all points in Kansas, Oklahoma and Indian Territory			25.00

Colonist rates are also in effect from all points east of Chicago and south of the Ohio river.

Santa Fe Agents in California will take deposits of money to cover price of tickets, which will be promptly furnished to passengers at any point from which these rates are in effect.

California illustrated literature mailed free to any address or may be had from Santa Fe representatives.

Tourist Sleeping Car Lines

Colonist tickets are honored in tourist sleeping cars which run via the Santa Fe to Los Angeles and San Francisco.

ings, painted them with government whitewash; planted eucalyptus, pepper and acacia trees around the fences, and sowed down the front yard to clover, we put in plants and flower seeds wherever we could, and before we really realized what we had done our place was a literal bower of roses, geraniums, poppies and other flowers and we found we had no time to think nor disposition to care for the city or its charms. Today, with good health, and lots of pretty things around us we wonder why we staid in Los Angeles as long as we did. I would not go back to the city for the present of a home on West Adams street. The country is the place for me and mine. I can, with enthusiasm, quote the words of the country songster who wrote:

"I would from the city's rule and law,
Its fashions and forms cut loose,
And go where the strawberry grows on its straw.
And the gooseberry grows on its goose;
Where the cow on the fragrant cowslip feeds,
Where the dew on her dewlap lies,
And the dog to the waving dogwood speeds,
And the bull to the bullrush flies."

I am writing a letter of my experience—I could write much more—to show my sisters that the country has charms which the city can not give. I have experienced a change of heart and like every new convert to a cause I want to tell some one about it.—E. B. M., Fernando.

COOKING AND SERVING VEGETABLES.

"Good cooking is to make the food palatable and pleasing to the eye. To know just how long to cook the article, the exact amount of seasoning to use, and the proper way to garnish and serve it. Cooking is not the degrading occupation some people regard it, fit only for those who cannot do anything else. It is a science not difficult to comprehend, but one that requires interest, attention and judgment; a science that has claimed the devotion of wise and learned men and women. The kitchen has been called the "Laboratory of a Household," wherein are concocted all those comfortable dishes that pertain to the health of a family.

Thus, well states Mrs. James Armstrong, in the Deseret Farmer, two important facts, which enter vitally into the health and happiness of every home.

Ruskin says: "Cooking means much tasting and no wasting." How many times suitable food is provided for a family, food which would strengthen the worn-out tissues, but it is utterly spoiled in the cooking. Vegetables, as well as every other kind of food, should be cooked just long enough and no longer. Over cooking is as bad as under cooking. A good cook studies the fire she is to cook with. She makes an intelligent use of the proper utensils, does not boil vegetables in a cake pan nor attempt to fry in a roaster. A good cook does not put off until the last minute her preparations for the meals, but has everything ready to begin on time, giving each article its full and right amount of heat, neither having the stove red hot nor putting the saucepan on the coals; her food never burns, never is underdone, but is always just right, because she is careful, watchful and thinks of what she is doing.

Aside from their value as a food nearly all vegetables possess curative properties of a very high order, and will many times do more towards aiding nature in overcoming disease and toning up the system than many drugs. This is particularly the case with children whose recuperative powers are great. Housekeepers should therefore begin by serving the table daily with the first spring vegetables and continue throughout the season. Many families use meat to the exclusion of other diet, which is by no means wholesome, to say nothing of the expense. A taste for vegetables can be cultivated in children very early, and mothers of families should see that such as are liked by their children are served with daintiness and variety so as to tempt the appetite and render vegetables a necessity upon the table. The daily diet may be so varied as to have some vegetable of medicinal quality served throughout the season, so as to keep the family in good health. If called upon to decide the most important item in cooking vegetables, in order to have them palatable, I would say the proper seasoning is by far the most necessary detail of this branch. Of course, the tastes of people differ as to seasoning, but a perfect blending of the various flavors suited to each dish rarely fails to be acceptable. Good seasoning of vegetables as well as of all food consists in knowing exactly how to produce the result.

In regard to the various utensils used to cook vegetables, I prefer the granite ware. If you use salt in cooking vegetables in the irot pots you will darken them, that is such vegetables as corn, etc. A great deal is in how the vegetables are sent to the table. Never send them to the table in cold dishes. Always have the dishes perfectly clean, and if possible free from cracks or unsightly marks. It pays to take time to arrange the vegetables nicely, as what looks nice is, I think, much more appetizing.

Potatoes are said to be valuable on account of their easiness of digestion and nourishing qualities. The different ways to cook potatoes are innumerable. Old potatoes are better if let stand in very cold water for ten minutes after peeling, it makes them firm. New potatoes should always be put in boiling water to cook, and if possible do not let them stand around after peeling them.

The value of the sweet potato as an article of food has long been well known, but it was during the war between the Northern and the Southern States, when luxuries of all kinds for the table were wholly unattainable, and even necessaries were scarce, that the Southern housekeepers learned for the first time its possibilities as a vegetable. Tomatoes are very wholesome, and are one of the best liked summer vegetables, and like potatoes there are a number of ways of cooking and serving them.

Onions are possibly the most healthful vegetable which is eaten at the table. They tone the system and invigorate the digestive organs. Cauliflower is recommended for people of sedentary habits. Asparagus is a good blood purifier and is used by the French in treating rheumatism. In boiling cabbage some people make a great mistake in boiling it too long. It should have a fresh taste when cooked and not too soft and soaked with water when served. A great many say they cannot eat cabbage, it does not agree with them. I think one reason is that they cook it too long. There is no tastier vegetable if properly cooked and served. Among the early spring vegetables few are more desirable than spinach, not particularly for its excellence as an article of food, but also for its medicinal qualities. It is considered to be a purifier of the blood, is one of our best early vegetables and can be served in a variety of ways. Celery is very quieting to the nervous system and very beneficial to sufferers from neuralgia and rheumatism. The most common way is to serve the stalks cold (after they have been thoroughly washed). Lettuce is a sedative, besides being cooling to the system. It is of course best as a salad, but it may be dressed with gravy, hard boiled eggs, or fried and seasoned with salt, butter and pepper.

The proper accompaniments for different kinds of meats are as follows: Roast and tomato or mushroom sauce; roast mutton, hare, venison and various kinds of beef should be served with grated horseradish; roast pork and apple sauce; roast veal, game, red currant jelly; boiled mutton and caper sauce; boiled chicken and bread sauce; roast lamb and mint sauce; roast turkey and cranberry sauce; boiled turkey and oyster sauce; boiled fresh mackerel and gooseberry sauce; boiled shad, boiled rice and salad; roast pigeon and mushroom sauce; fresh salmon, green peas and cream sauce; roast goose and apple sauce.

MARSHMALLOW CANDY.

Editor Cultivator: Can you please send me through the columns of your paper, a recipe for marshmallows, in which gum Arabic is used.—S. R. C.

Dissolve, by heating over a slow fire, 8 ounces of gum Arabic in 3 gills water; stir and strain. Boil 1 ounce marshmallow roots in a little water for half an hour over a slow fire, add the gum solution with one-half pound of loaf or powdered sugar; let cook slowly and stir constantly until it becomes a thick paste which will roll between the fingers. Add the well beaten whites of two eggs, stir for a minute or two and pour into a pan to cool. Sheets of white paper should be placed in the bottom of the pan with the ends projecting in order to lift out the paste when it may be cut into little blocks and rolled between the fingers.

SOMETHING OF INTEREST TO COOKS.

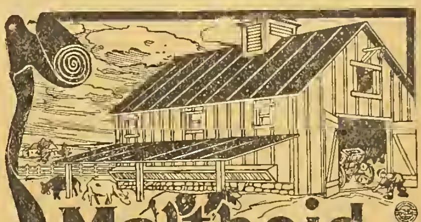
A cook-book written by a French person not knowing both countries would be in some instances almost useless. as the products of France differ very much from those of America. For instance. a French cook-book giving a recipe for cooking a sweetbread will give directions as to the time required for cooking a sweetbread taken from a French calf. But the calves being killed in France when they are three or four times older than when they are killed here. the sweetbread is naturally much larger and will require a longer time for cooking. A French cook-book will direct you to cook green peas with lettuce; and the peas being very tender will furnish enough liquid, helped by the melted lettuce, to be cooked without water. This is impossible with peas grown here, for they are picked too old and too large, and there is also something in the climate or the soil which prevents their being as tender as they are in Europe.—Woman's Home Companion.

THE ENGINE'S WHISTLE.

Are you familiar with the meaning of the railway engine's whistles? If not, the following may be interesting information: One long blast of the whistle is the signal for approaching stations, railway crossings and junctions. One short blast of the whistle is a signal to apply the brakes—stop. Two long blasts of the whistle are a signal to throw off the brakes. Three long blasts of the whistle are a signal that the train has parted. Three short blasts of the whistle when the train is standing are a signal that the train will back. Two long, followed by two short blasts of the whistle are a signal of approaching road crossings at grade. Five short blasts of the whistle are a signal to the flagman to go back and protect the rear end of the train. A succession of short blasts of the whistle is an alarm for persons or cattle on the track, and calls the attention of trainmen to danger ahead.

Good gracious! these fat men will be the ruin of me," exclaimed the automatic scales; "that last one simply put me on the bum."

"Well," replied the chewing gum machine, " now you can lie in weight for the next one."—Philadelphia Press.



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Climate and Crops

GENERAL SUMMARY.

The weather during the week was seasonable and for the most part fair and pleasant. There was a marked falling off in precipitation as compared with the preceding week and the last week in March. In some ways the week may be considered as a forerunner of summer weather. There were light showers on Tuesday and Wednesday in the central and northern portions of the State and cloudy weather in the South. During the balance of the week the skies were as a rule clear during the day hours and somewhat cloudy, especially along the coast, during the night and early morning hours. There was a fair amount of sunshine, but in no part of the State continued clear weather. A moderate storm over the Sierra Nevada and Eierra Madre on Tuesday caused strong north winds in the northern portion of the State. These lasted until Wednesday night. North winds, but much lighter, prevailed on Friday and Saturday.

The temperatures were nearly normal at all points throughout the State except on Friday afternoon, when temperatures were slightly higher than the normal. At Los Angeles a maximum temperature of 80 degrees occurred.

The absence of any marked warm spell is shown in the steady, slow fall of the rivers in both the Sacramento and San Joaquin valleys. At all points the stages are below the danger line.

STOCK FOOD COMPANY IN NEW QUARTERS.

The long-time favorite, West Coast Stock Food, is now manufactured in new quarters and with new appliances which are thoroughly up to date. The company was reorganized some months ago when Mr. T. S. Thompkins of Pasadena became associated with Mr. Wright, the former owner.

Mr. Thompkins brings large capital and with experience to the business end of the company and Mr. Wright retains the management of the working end of the establishment. In the manufacture of an honest food or of a tonic or remedy, Mr. Wright has established a reputation which is widely known.

In the mill which is now located at 818 San Fernando street, Los Angeles, a great change has been effected. The basement and two upper floors are well filled with machinery and elevators. The hauling of the raw material and of the foods is as near automatic as possible, the grains and other ingredients passing from the mill where they are ground, to the mixer, thence to sack or carton; thence to upper floors, where labels or stencils are attached.

Besides the foods the West Coast people put out "Killamite," and it will kill several—poultry tonic, which is not only a tonic for laying hens, but a cure for sick ones. Then there is West Coast Lice Killer, which fixes the lice good and plenty.

In the foods the company put out everything for poultry which will enable them to go "from shell to shelling" successfully, and with constitutions ready for hard work. These foods have a list of friends amongst the prominent poultry men and women who give them most hearty commendation.

But the best commendation is a sack of the chick food or egg food, followed by close observation of the results of feeding it.

Visit the company at the new quarters and you will see things.

The Produce Markets

Los Angeles Markets.

Los Angeles, April 19, 1906.

Prices of all necessities will doubtless be in a very unsettled state for a time, though how much the San Francisco disaster will affect local markets, time alone will tell.

Butter.

B. of T. Creamery, per roll	.50
Valley Creamery, fancy	.48
Valley Storage	.46@47

Cheese.

Cal. 3-lb. hand	.17½
Cal. Young America	.16½
California Anchor	.15½
Northern	.16@17
Domestic Swiss	.19@20
Imported do	.26½@27

Eggs.

Eggs, Fresh Ranch,	.19

Poultry.

Fryers, 2 1-2 lbs	.18@19
Broilers, under 2 lbs., per lb.	.19@21
Young Roosters. per lb.,	.16@17
Hens. per lb.	.14
Ducks, per lb.	.14@15
Geese	.14@15
Turkeys	.19

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock:

Hogs, 200 lbs.	.6
Prime Steers	.4½
Cows	.3¼
Calves, per lb	.5
Sheep, ewes, per head	.4.50
Wethers	.5.00

Potatoes.

Northern. per sack	.1.60@1.70
Locals, per cwt	.1.10@1.25
Locals, new, per box	.1.50
Sweets, white, per cwt.	.2.25
Sweets, yellow, cwt.	.2.00

Vegetables.

Onions, Aust. Brown, cwt.	.1.50
Onions, yellow, cwt.	.1.75
Garlic	.7@10
Cabbage, per sack	.1.00@1.35
Cauliflower, per doz	.60
Asparagus	.8@9
Lettuce, per dozen	.20@30
Bell Peppers	.18@20
Chili, Green	.20@25
Cucumbers. per doz	.60@1.23
Radishes, per doz	.15
Lima Beans	.10@15
String Beans	.8@10
Beets	.40
Green Onions, doz. bunches	.20@25
Carrots, doz. bunches	.25@35
Turnips, doz. bunches	.25
Celery, per doz	.45@50
Peas, per ℔	.3@5
Oyster Plant	.40
Tomatoes, local	.1.00@1.50
Parsley, per doz. bunches	.75
Pie Pumpkin, per lb.	.01

Citrus Fruits.

Lemons, standard	.1.65@1.75
Lemons, choice	.1.50@1.60
Navels, extra fancy	.2.25@2.50
Navels, choice	.2.00@2.25
Grapefruit	.1.75@3.00

Fresh Fruits.

Pear, Winter Neils, per box	.4@6
Pears, Winter Nelis, per box	.5@6
Pippins	.1.90@2.00
Ganos	.2.25@2.75
Permains	.1.90@2.00
Dewberries	.35
Strawberries, per box	.10@18

Dried Fruit.

Apples, evaporated, ex, ch, 10; ch 9½.
Apricots, ex ch, 11; fy, 8½; ch, 7½.
Peaches, fy, 10½; ch, 9.
Santa Clara Prunes, 30-40, 8½, 40-50, 7½, 50-60, 7; 60-70, 6½.

Beans, Dried.

Limas	.5.00@5.50
Pinks, fancy	.2.40@2.50
Lady Washington	.3.00@3.10
Small White	.3.50@3.75
Black Eyes	.5.50@6.00

Honey.

Honey, comb frames	.12@13½
White, Strained, per ℔	.6
Light Amber	.5
Amber	.4½
Beeswax	.27

Hay.

Barley, No. 1	.14.00@15.00
Alfalfa, local	.13.00@14.00
Alfalfa, Northern	.12.50
Wheat. No. 1	.16.00
Tame Oats	.18.00

Grain.

Selling prices of mill stuffs f. o. b. cars L. A., in quantity, are:

Rolled Barley	.1.40
Bran	.1.25
Feed Corn Meal	.1.45
Shorts	.1.45
Wheat, per cwt	.1.65
Cracked Corn	.1.40
Oil Cake Meal	.2.25
Cocoanut Meal	.1.55

San Francisco Markets.

San Francisco, April 18, 1906.

(On account of the terrible disaster in San Francisco no such thing as a market, under the general acceptance of the term, will be known for some time to come. We give below the prices current the day before the earthquake.)

Butter.

Fresh California extras	.20
Fresh California, firsts	.19
Fresh California, seconds	.18

Cheese.

California, new	.11½
California, firsts	.10½
California seconds	.11
Eastern Cheddars	.16
Storage, California	.14
Storage, eastern	.16

Eggs.

Eggs, fresh (ranch)	.18½
Firsts	17
Storage, Eastern	.15

Poultry.

Old Roosters, per doz	.4.50@5.50
Young Roosters, per doz	.6.00@7.50
Hens, per doz.	.5.00@7.50
Ducks, per doz.	.5.00@7.00
Turkeys, per lb.	.15@17
Geese, per pair,	.2.00@2.50

Live Stock.

Hogs, per lb., 80 to 130 lbs.	.7
Hogs, per lb., to 250 lbs	.7¼
Hogs. pr lb., 250 to 350 lbs.	.6¾
Hogs, per lb., rough heavy	.5
Prime Steers, lb	.8½
Cows, per lb.	.6½
Calves, ℔	.4½@5
Sheep, ewes, per lb.	.4½@5
Lambs, per lb	.5@7
Wethers, per lb.	.5@5½

Potatoes.

River Burbanks	.75@90
Oregon Burbanks	.90@1.25
Salinas Burbanks	.1.00@1.50
Sweets, Merced	.75@1.25
New Potatoes, per ℔	.2@3

Vegetables.

Asparagus	.4@7
Rhubarb, per box	.65@85
Onions, Oregon, per sack	.85@1.15
Onions, Australian	.3.50
Bell Peppers, green	.25
Cucumbers, per doz	.75@1.00
Tomatoes, per box	.90@1.25

String Beans	.15
Wax Beans	.12
Summer Squash, per box	1.25
Green Peas, per lb	3½@5

Citrus Fruits.

Navels, fancy	2.50@3.75
Seedlings	1.50@2.00
Lemons, standard	1.50@3.00
Grapefruit	1.50@3.50
Tangerines	1.50@2.00

Fresh Fruits.

Apples, per box, extra	2.00@2.50
Apples, fancy	1.50@1.75

Beans, Dried.

Limas	4.60
Pinks	1.90@2.90
Small Whites	3.15@3.25
Black Eyes	4.40@4.50
Bayos	3.40@3.50
Red Kidney	3.50@3.75
Horse eBans	1.50@1.75

Hay.

Barley, new	$8.00@11.00
Alfalfa	10.50@11.50
Wheat	11.50@16.50
Oats	9.00@13.00

Grain.

Wheat	1.27@1.30
Barley	1.20@1.22
Corn, California, New Large	1.26
Oats	1.50@1.70
Rye	1.45@1.52
Rolled Barley, per ton	25.00@26.00
Bran, per ton,	19.50@20.50
Feed Corn Meal, per ton	28.00@30.50
Middlings ½	26@30
Cracked Corn, per ton	28.50
Oil Cake Meal, per ton	37.00
Cocoanut Cake, per ton	23.00

CITRUS MARKETS

NEW YORK, April 17.—Thirty-four cars were sold at auction today. The market is lower. The weather is favorable.

NAVELS (Vent.)

	Average
Stork, xc, San Antonio Ex	$2.30
Quail, xc, O.-C. Ex	2.75
Square, or., Riverside Ex	2.80
Ruth, fy, Rubidoux Frt. Co	2.90
King	2.65

NAVELS (Iced.)

Red Globe, xc., Riverside Ex	2.45
Elk, xc., Riverside Ex	2.50
Red Globe, xc., Riverside Ex	2.60
Fiesta, xc., Riverside Ex	2.60
Riverside, st., Riverside Ex	2.65
Uncle Sam, xf., Riverside Ex	2.80
Eagle, xc., Riverside Ex	2.80
Eagle, xc., Riverside Ex	2.85
Blue Globe, xf., Riverside Ex	3.05
Our Pride, xf., Riverside Ex	3.05
Sweetheart, fy., Riverside Ex	3.20
Ben Hur, ch., R.-H. Ex	2.55
Royal Knight, xf., R.-H. Ex	3.10
Hunter, st., A. C. G. Ex	2.60
Pointer, xc., A. C. G. Ex	2.60
Stag, xf., A. C. G. Ex	2.95
Diamond, xc., San Antonio Ex	2.65
Century, fy., Houser Bros	2.50
Camelia, xf., C. C. U. Redlands	2.75
Rialto, fy., C. C. U., Rialto	2.70
Gondolier, xc., C. C. U. Rialto	2.35
Sky High, xc., C. C. U. Riverside	2.45
Excelsior, ch., C. C. U. Riverside	2.25
Peacock, xc., Worthley & Strong	2.45
Pyramid, xc., G. R. Hand Co	2.45
Santa Fe, st., Moffatt Frt Co	2.55
Fountain, ch., Moffatt Frt Co	2.55
Fountain, ch., Moffatt Frt Co	2.65
Fountain, ch., Moffatt Frt Co	2.75
Golden Eagle, st., C. C. Chapman	2.55
Old Mission, ch., C. C. Chapman	2.55
Old Mission, fy., C. C. Chapman	3.20
Clover, xc., Redl. Or. Gro. Ass'n	2.65
Gabriella, fy., Indep. Frt. Co	2.70
Sunshine, fy., Or. Gro. Cash Ass'n	3.10
Signet, xg., Stewart Frt Co	2.80
Signal, xf., Stewart Frt Co	2.85
Alpha, xf., Riverside Frt Co	2.85
Orchard, or., National Or. Co	2.90
Carnation, xc., Moulton & Greene	3.00
Gypsy Queen, xf., Moulton & Greene	3.05
Standard, Moulton & Greene	2.65

THOMPSON IMP. NAVELS (Iced.)

Carnation, xc., Moulton & Greene	3.15
S. S., ch., Sunset Frt Ex	2.80
Warrior, xc., Stewart Frt Co	3.50
Gypsy Queen, xc., Moulton & Greene	3.50
Signal, xf., Stewart Frt Co	3.50

MEDITERRANEAN SWEETS.

Aurora, xc., A. J. Anderson, Whittier	2.10

VALENCIAS (Vent.)

Aurora, xc., A.J.Wilson, Whittier	2.50

GRAPE FRUIT.

Quail, xc., O.-C. Ex	3.80
Bear, xf., O.-C. Ex	3.80
Papoose, ch., G. R. Hand & Co	2.60
Limited, xf., G. R. Hand & Co	3.60
Cammellia, xf., C. C. U. Redlands	3.70
Sky High, xc., C. C. U. Redlands	2.75

TANGERINES (Vent.)

Bear, xf., O.-C. Ex. (quarters)	1.20
Quail, xc., O.-C. Exchange	1.70

TANGERINES (Iced.)

Squirrel, fy., A. H. Frt Co	1.75

SEEDLINGS (Iced.)

El Toreador, st., San Mariano G. P. A.	2.55

BLOODS (Whole Boxes.)

Moreno, Worthley & Strong	2.75
Squirrel, fy., A. H. Fruit Co	2.85

BLOODS (Half Boxes.)

Squirrel, fy., A. H. Fruit Co	1.40
Moreno, Worthley & Strong	1.40
Blue Globe, xf., Riverside Ex	1.50

LEMONS.

Warrior, xc., Stewart Frt Co	2.10

Foreign Lemon Sale.

NEW YORK, April 17.—Seventeen hundred boxes of Sicily lemons were sold today. The stock offered was in good condition. The market is very strong. Twenty-three hundred boxes will be offered at Thursday's sale. Fancy 300s brought $3.55 to $2.75; choice 300s brought $2.10 to $2.45: fancy 360s brought $2.80 to $3.00; choice 360s brought $2.45 to $2.60.

Cleveland Market.

CLEVELAND, April 17.—Eight cars were sold at auction yesterday. The market is weak on large sizes.

NAVELS (Vent.)

Colombo, st., Semi Tropic Ex	2.35
Arrowhead, xc., Highl. O. G. A	2.50
Pine Cone, xf., Highl. O. G. A	2.50
Tiger, fy., S. B. Co. Exchange	2.75

NAVELS (Iced.)

Newsboy, or., R.-H. Exchange	2.70
Royal Knight, xf., R.-H. Ex	2.80
Newsboy, or., R.-H. Exchange	2.90
Royal Knight, xf., R.-H. Ex	3.10
Amethyst, st., C. C. U., Glendora	2.45
Stearns, st., C. C. U., Highlands	2.55
Topaz, xc., C. C. U., Glendora	2.75
Highlander, xf., C. C. U., Highl	2.90

The recent heavy rains have caused a marked change in the course of the San Diego River west of San Diego. Instead of emptying near the mouth of False Bay, as heretofore, the stream has cut a new channel across the Old Town flats, passing through a slough to the sea.

An invention of great benefit to irrigators has recently been patented by A. W. Applegate of Brawley. It consists of an automatic irrigating gate which opens itself, and wherever fields are irrigated from land to land will permit a large saving of work and expense to the irrigator.—Brawley News.

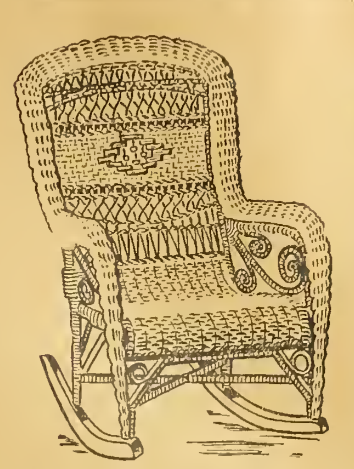
OPIUM and Whiskey Habits cured at home without pain. Book of particulars sent FREE. B. M. Woolley, M.D., Atlanta, Ga., 103 N. Pryor St.

I WILL GIVE $1000
IF I FAIL TO CURE ANY CANCER OR TUMOR

I Treat Before it poisons deep glands, **NO KNIFE OR PAIN. No Pay Until Cured.** No X Ray or other Swindle. A Pacific Island plant makes the cures. **Absolute Guarantee.** Any tumor, lump or sore on the lip, face or anywhere six months is cancer. **130-Page Book** sent free with testimonials of thousands cured. Write to them.

ANY LUMP IN WOMAN'S BREAST
Is CANCER and if neglected it will always poison deep glands in the armpit and kill quickly.
Address DR. & MRS. DR. CHAMLEY & CO.
Most Successful Cancer Specialists Living.
25 Third St., San Francisco, Cal.
KINDLY SEND TO SOME ONE WITH CANCER

We Are Connected With the Pacific Purchasing Company

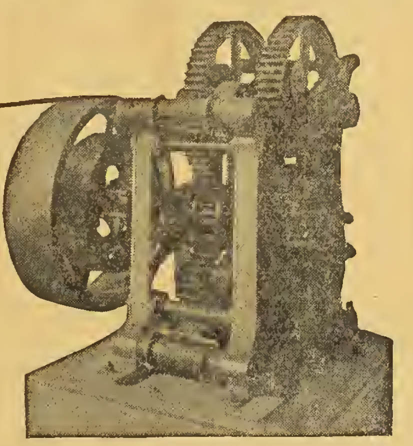


Buy Furniture Now
For Your Summer Comfort

We have an excellent showing of the finest Rattan Furniture on the market; pretty new designs in rockers, chairs, easy chairs, settees, etc. You should make your selection now while the showing is complete. Mail orders receive prompt attention.

Niles Pease Furniture Co.
439-441-443 S. Spring St., Los Angeles, Cal.

The Pomona Pump



The New Pomona Pump is now being manufactured with machine cut gears and machine cut steel or bronze pinions. The pump fitted with this kind of gearing runs as smooth as a clock and there is absolutely no noise or vibration. The company have recently taken contracts for installing their largest sized pump with this class of gearing for the Artesian Belt Water Company of San Dimas, Western Water & Power Company of Glendora and other large irrigation companies. They are required to furnish these pumps with cylinders up to 12 inches in diameter and 72 stroke which has capacity of over 60 Miner's inches of water. The valves are made entirely of phosphor bronze with ground metal taper seats so there is very little obstructiin to the water in passing through them and it is impossible to clog them with sand. These, in connection with machine cut gears, in the pump head, make a strictly high grade pumping outfit and the best by a long ways of anything on the market today.

This head and valves are both protected by United States patent. Beware of infringing as both manfacturer and user are liable.

The company has recently installed one of their latest Improved heads for the Santa Anita Land Company, a subdivison of the Baldwin Ranch. Below is what the owners have to say about it:

"The new 38 pump you installed for us on our tract on the E. J. (Lucky) Baldwin Ranch is giving us satisfaction in every way. We think we have the very best that money will buy. Both as regards to pump, material used and installation. We made an excellent change when we removed the pump we had been using and installed your make."

We have pleased these people and there is no reason why we cannot please you.

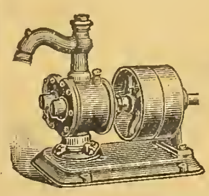
Send for catalog to

The Pomona Manufacturing Co.
Pomona, California

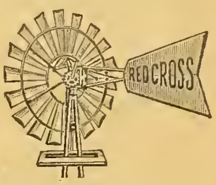
THE BOSS LADDER

We have been making the Boss Fruit Ladder since 1895, and thousands of them are now in use. They are lighter, stronger and stiffer than any other make. A 10-ft. ladder weighs 25 lbs. so that girls and boys can handle them. Each step is braced with four wire braces. We will ship one or more to any S. P. R. R. Station in California, on receipt of price—*30 cents per foot and prepay the freight.*

Driver, Aber & Co., San Leandro, Cal.



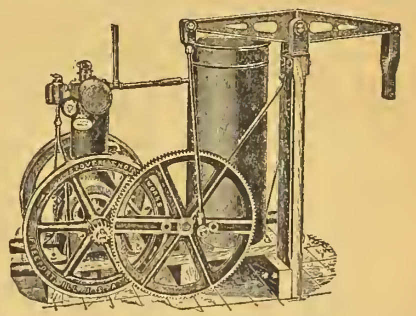
Gould's Rotary Pumps



Red Cross Wind Mills

Woodin & Little

Pumps for all purposes, Pipe Fittings, Brass Goods, Wind Mills, Gasoline Engines. Tanks, Garden Tools. Send for Catalogue.
209-211 Market St. Department A
San Francisco, Cal.



Stover 2 horse power Gasoline Engine, fitted with electric sparks, high grade, easy to start; oh, how simple.

SALT LAKE ROUTE

EXCURSION RATES TO EASTERN CITIES.

The Usual low round trip rates to the east will be available this season from California and Nevada stations of the Salt Lake Route on account of various conventions as follows:

New Haven, Ct.—Knights of Columbus—Sell May 24, 25, 26—Return limit August 31. Rates will be announced later.

Denver. Colo.,—B. P. O. Elks—Sell July 17, 18, 19—Return limit Sept. 30. Rate $55.

Minneapolis, Minn.,—G. A. R.—Sell August 7, 8, and 9.—Return limit Oct. 31. Rate $70.

Milwaukee, Wis.—Order of Eagles—Sell Aug. 7, 8, 9.—Return limit Oct. 31. Rate $74.50.

Also sell July 2 and 3—Return limit 90 days Sell August 17, 8, 9, and Sept. , 9 and 10—Return limit Oct. 31.

Chicago, Ill.,—72.50—St. Louis Missouri, $67.50.

St. Paul, Minn. $70.00—Minneapolis, Minn. $70.00.

Kansas City, Mo.,—$60.00—Omaha, Nebraska, $60.00.

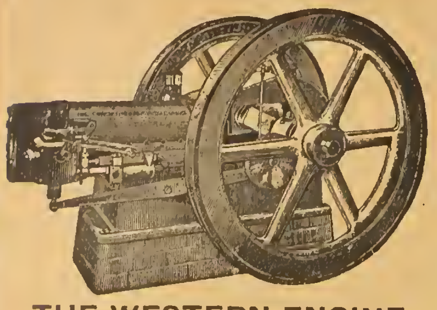
Council Bluffs, Iowa, St. Joseph, Mo. $60.

Tickets will be sold going via Salt Lake Route and connections and returning via entirely different route, if desired. For full particulars as to stop off privileges, etc., application should be made to Salt Lake Route Agents.

The excellent train service and equipment of the Salt Lake Route and great variety of routes offered affords opportunity for an enjoyable trip. Inquiries from prospective travelers will receive prompt attention from Agents or T. C. Peck, A. G. P. A., Los Angeles.

THE WESTERN GAS ENGINE

"From Factory Direct to User"



THE WESTERN ENGINE
Maximum Power at Minimum Cost

Designed and built by Western experts for Western use with Western fuel. In construction the Western embodies many original, yet practical ideas, which place it in advance of any other make on the market today. The simplest, strongest and best engine for

Irrigation, Power and Electric Plants. Any Size from 5 to 500 H. P.

Burns cheapest fuel—gasoline, distillate or crude oil—with a saving of 20 to 40 per cent over any other style. **Send for Illustrated Catalogue** fully describing every detail of construction; tells **how** and **why** the Western excels all others; it gives the facts—the proof. Learn what Western engines are doing for others. Send your name today—ask for latest issue, A6.

WESTERN GAS ENGINE CO.
908-932 N. MAIN ST. LOS ANGELES, CAL.

RUBEROID ROOFING

The peer of all with 14 years' record for durability and efficiency. Cheapest because best.

BLAKE, MOFFITT & TOWNE
Both Phones 679 242 to 248 So. Los Angeles St., Los Angeles, Cal.

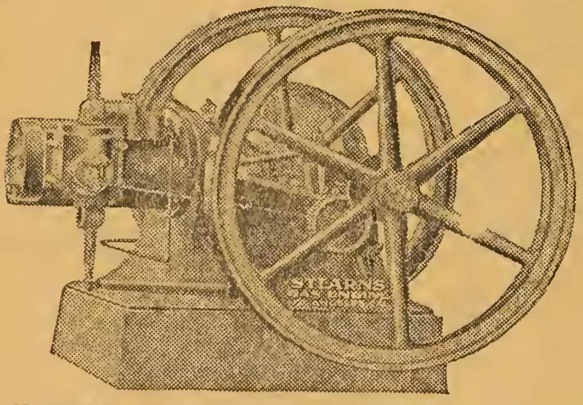
NATIONAL WOOD PIPE CO.

MADE FROM CALIFORNIA REDWOOD OR SELECTED PUGET SOUND YELLOW FIR **WOOD PIPE** WOODWARD PATENT MACHINE BANDED PIPE WHEELER PATENT CONTINUOUS STAVE PIPE BORED WOOD WATER PIPE

Puget Sound Office, Olympia, Washington
Los Angeles Office, cor. Sixth and Mateo Sts. San Francisco Office, 301 Market St.

A booklet, "The Whole Story About Wood Pipe," mailed free upon request

STEARNS GASOLINE OR DISTILLATE ENGINE



Has many points superior to any other engine.

Hundreds in Use
Every One Satisfactory

Built for California cheap fuel.

For further information, write

STEARNS GAS ENGINE WORKS 1001-3-5 NORTH MAIN STREET LOS ANGELES, CALIFORNIA

NO, THIS IS NOT AN ARTESIAN WELL, BUT

AN IRRIGATION PUMPING SYSTEM
SUPPLIED BY
S. J. SMITH MACHINERY CO.
POWER PLANTS, PUMPING MACHINERY AND WATER SUPPLY GOODS 212-214 S. Los Angeles St., Los Angeles, Cal.

FREE TRIP to Buy a HAY PRESS

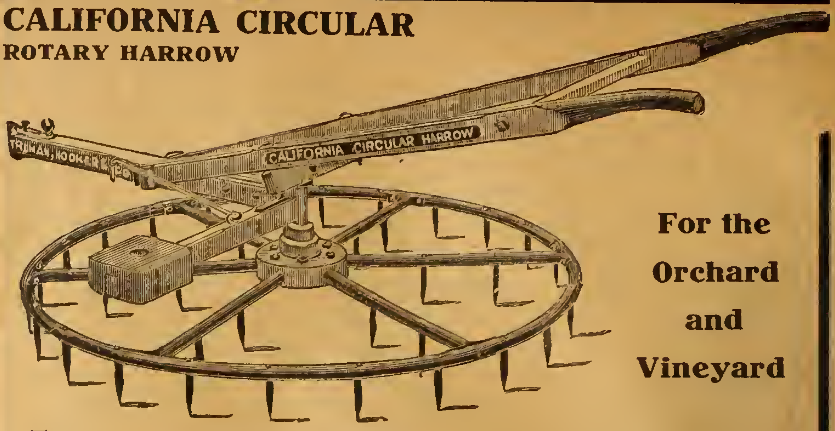
NEW CENTURY
'PULL POWER NO PLUNGER TO BREAK.
7-inch Step-Over.
Tying chamber 18 inches off ground.
Stands up to its work, no taking off wheels.

STRONGEST PRESS ON EARTH. ALL IRON AND STEEL.

So confident are we that you will buy the New Century Press that we make the above offer. No strings to it. You go to Los Angeles and see our press; buy it or any other of 12 factories shown in Los Angeles and we pay for your ticket for 300 miles and return. If you cannot go, write for our proposition to ship you a New Century for 10 days free trial. We ship direct from warehouse in Los Angeles. For full particulars address,

WESTERN STEEL & WIRE CO., 202 E. OSAGE AVENUE, KANSAS CITY, KANS.

CALIFORNIA CIRCULAR ROTARY HARROW



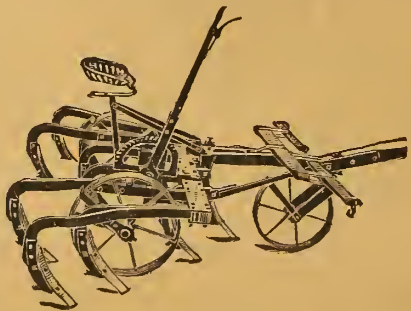
For the Orchard and Vineyard

The California Vineyard Harrow rotates either way at the will of the driver. Is a perfect PULVERIZER, LEVELER, CLOD-CRUSHER and WEED-KILLER. Cleans itself at every revolution. Write for prices.

PACIFIC IMPLEMENT COMPANY
133 to 153 Kansas Street San Francisco, Cal.

Caustic Soda 60%, 70%, 74% 76%, 78%, 99%. Powdered and Solid. Full information cheerfully given. All goods guaranteed.

M. Bettman Co. 121 California St. San Francisco



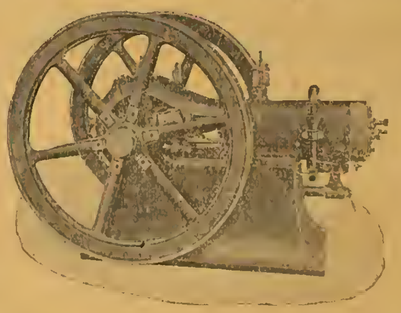
The Celebrated Forbes Cultivator

The best known Cultivator for Orchard and Vineyard use. Send for Catalogue and prices.

ENTERPRISE MANUFACTURING COMPANY,
349 Santa Clara St. San Jose, Cal.

For General Machine Shop, Blacksmith and Foundry work and repairing our prices are always the lowest.

THE CALLAHAN DISTILLATE ENGINE



A first class Engine at a moderate price.

It is not how much you pay but what you get for your money.

Price Machinery is a good investment. Permanent installations always.

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523 Market St. San Francisco, Cal.
Write for Catalogues

ECLIPSE HAY PRESSES ARE RELIABLE

Steel Construction, Strong, Durable, No Breakage, Sold on Easy Payments. Write us for Catalog and prices. Full line.
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ECLIPSE HAY PRESS CO., 620 W. 7th St., Kansas City, Mo.
Stocks Carried at Los Angeles and Sacramento.

Write for catalogue
AMES PUMPS ARE STANDARD
A.T. Ames, Galt, Cal.

THE COLUMBUS
Gas, Gasoline and Distillate Engine

Embodying New and Important features in design and operation.

Send for Catalogue E. All information furnished. Address

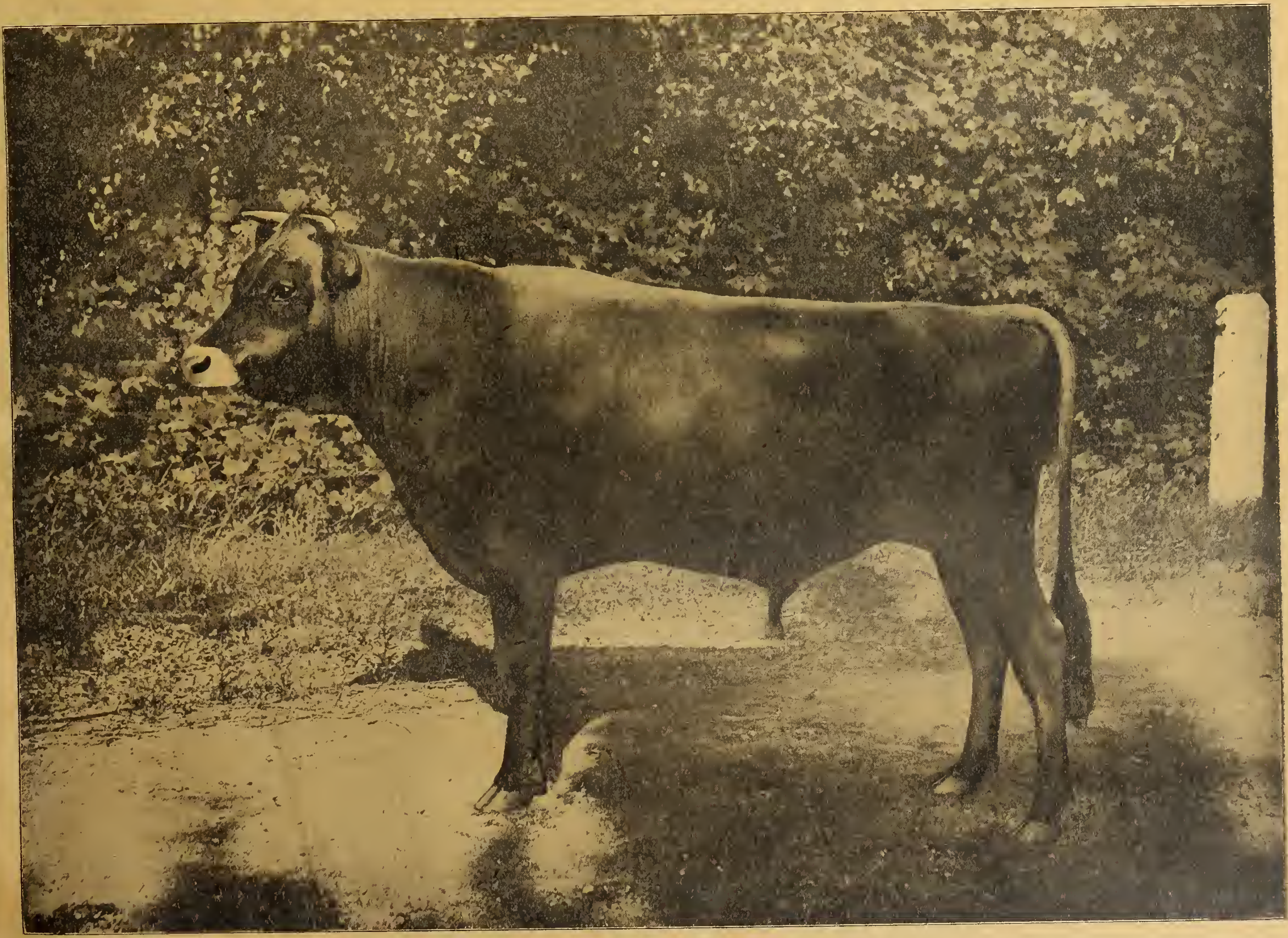
Columbus Machine Company
121 So. Los Angeles St. Los Angeles Cal.

OF THE UNIVERSITY of ILLINOIS

CALIFORNIA CULTIVATOR

DEVOTED TO AGRICULTURE IN ALL ITS BRANCHES

LOS ANGELES APRIL 27, 1906 SAN FRANCISCO



YEARLING JERSEY BULL. LEDA FONTAINE DUKE 69636, IMP.

Champion Bull at the New England Agricultural Fair, Worcester, Mass., 1905. Dam, Sweet Leda, P. 10454, H. C., daughter of Forfarshire and Golden Leda, P. 8000, H. C., winner of first over Jersey, 1901, and dam of Leda's Golden Lad, first over Jersey in bull class same year. Sire, Fontaine's Noble, P. 3410, H. C., son of Mabel's Poet, P. 2964, H. C., and Fontaine's Princess, P. 8507, H. C. Leda's Fontaine Duke is owned by Chas. H. Morgan. Hillside Farm, Boylston, Mass.

EARTHQUAKE IN WISCONSIN.

Kendalls, Wis., April 11.—By special dispatch—The following telegram tells how three separator manufacturers met an earthquake that jarred the ground under their feet:

> Kendalls, Wis., April 11th.
> The Sharples Separator Co., Chicago.
> "In the presence of forty dairymen, Tubular won big contest here yesterday over three competitors. Sold committee six sixes. Marie."

Mr. Marie is the traveling representative of the Sharples Separator Co. of West Chester, Pa., Chicago, Ill., and Toronto, Canada, manufacturers of the famous Sharples Tubular Cream Separators. The Sharples Separator Co. certainly seems to have things about their own way, easily winning all public contests in which they enter their machines. This contest certainly proved an earthquake to the three defeated competitors, as Mr. Marie's telegram says they were not only defeated, but that six of the popular number Six Tubular Cream Separators were sold on the spot as a result of this contest.

RASPBERRIES.

An exchange says:

The small fruits have a place in the garden, and with the exception of the strawberry, none is more important than the raspberry. It is needless to say that the raspberry is easily grown. Everybody knows that it is. Now that the wild berries, which were once so common, have so largely disappeared, a corner of the garden is reserved for the cultivated varieties.

The soil requirements differ somewhat with the varieties. In the main, however, the red and yellow kinds prefer a rich, moist loam, while the blacks do better in light, sandy lands, though not averse to heavy soils. But there are varieties of reds that will grow on sand, so people who have that kind of soil need not be deterred from setting them, although the ground should be enriched with a liberal amount of potash and phosphoric acid, also some nitrogen.

Most people prefer the red kinds for a dessert fruit, though the blacks have many friends. The yellow kinds are little cultivated, but they mix nicely with either of the others and make an attractive dish for the table. Purple varieties are more tart than the others, but are in favor for canning.

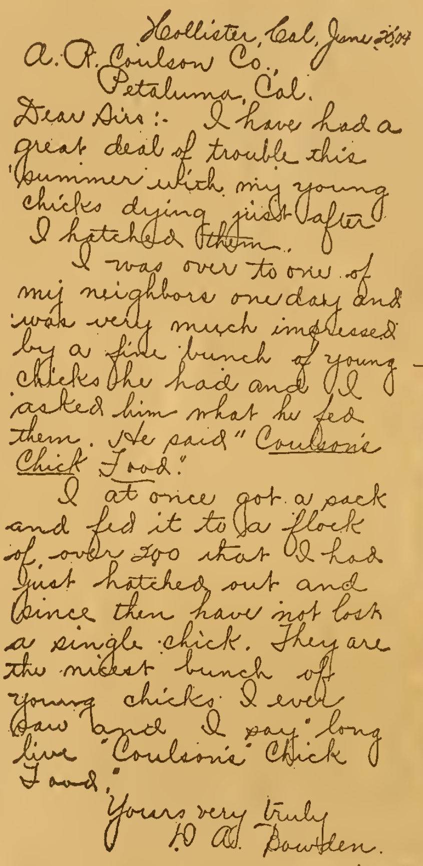
Those who intend to set raspberries will find it best to consult local growers in regard to suitable varieties, as they differ greatly in regard to fitness. A kind which is highly praised in one place may be very poor for another. The most extensively raised red variety is the Cuthbert. It succeeds over a wide range of country.

ATTENTION! FOR FRUIT-GROWERS!

Mr. F. W. Dieckmann's office on 214 California Street, San Francisco, is destroyed. All the valuable statistics of stock and dried fruits and their values in all the large cities in America and Europe are burnt. Still Mr. Dieckmann is able to give valuable information. A good many packing plants have been destroyed and his many clients in Europe and the States wish to buy fruit direct from the growers. Mr. Dieckmann has 425 buyers. It will pay you to open correspondence with him at once. His office will be until further notice at 2615 Santa Clara Ave., Alemeda, Cal.

San Diego is planning a citrus fair for next winter.

Coulson's Growing Chick Food



Hollister, Cal, June 20'04
A. R. Coulson Co.,
Petaluma, Cal.
Dear Sirs:- I have had a great deal of trouble this summer with my young chicks dying just after I hatched them.
I was over to one of my neighbors one day and was very much impressed by a fine bunch of young chicks he had and I asked him what he fed them. He said "Coulson's Chick Food."
I at once got a sack and fed it to a flock of over 200 that I had just hatched out and since then have not lost a single chick. They are the nicest bunch of young chicks I ever saw and I say long live "Coulson's" Chick Food.
Yours very truly
D. A. Bowden.

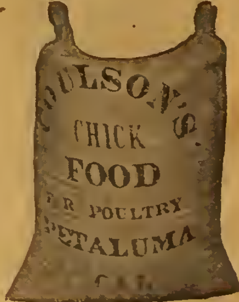
Puts your chicks ahead of all competition distanced. A complete and perfectly balanced ration for growing chicks, etc., ground grains, seeds, blood, bone and meat, etc., allcombined. It puts the flesh on them it's wonderful how it makes chicks grow.

After the chicks get to be three or four weeks old, it will be essential to give them a meal once a day of Coulson's Growing Chick Food, and when they get to be six weeks old. feed them two meals of it a day.

The Growing Chick Food is of a different combination than the baby chick food. The Growing Chick Food is ground up more like meal. It is a stronger ration. containing more Fine Meat Meal and Dried Blood, etc., so it is more of a forcing food for the growing broilers—makes the chicks heavier and plumper and makes them develop rapidly.

Mix some of the growing chick food with milk or hot water, and manipulate it thoroughly and feed in a crumbly. not sloppy, condition. Another way is to take a panful of the Chick Food and bake it over night. Then the first thing in the morning crumble it up and give it to them.

Raised on Coulson's Chick Food. Showing One of the Colonies of Pullets, 3½ months old.



Plant of Armour Packing Company [illegible] Meal is Made That is Used in Making Coulson's Chick Food.

Why You Should Use Coulson's Growing Chick Food

Common grain or chick foods, as a rule, contain too much fat-forming and not enough bone and muscle forming elements, and in consequence, the chick develops indigestion and diarrhoea, and soon dies.

If you will Feed Coulson's Growing Chick Food to the chicks they will be fully nourished, as this food is a complete properly balanced ration, all mixed, ready to feed.

Coulson's Chick Food is not very expensive. It is much cheaper to feed Coulson's Chick Food and raise big, strong chickens, than to feed by guess, a little of this and a little of that and not raise more than one-half of them. Remember Coulson's Chick Food contains everything required to fully nourish the chicks for the first two or three months.

All the trouble of hatching chicks is wasted if they don't live and grow.

If you like to see chicks dive into the feed as though they like it; you want to see the little chicks always spry and healthy; if you want them to grow rapidly and mature quickly;then you want to feed them the first three months on COULSON'S CHICK FOOD and you will be pleasedwith the way your little chicks are growing. It will raise the finest and largest chicks.

If you are going to raise any chicks this year. give it a trial.

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CALIFORNIA CULTIVATOR

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Making the Lawn and Subsequent Care

By L. C. Corbett, Horticulturist, Bureau of Plant Industry

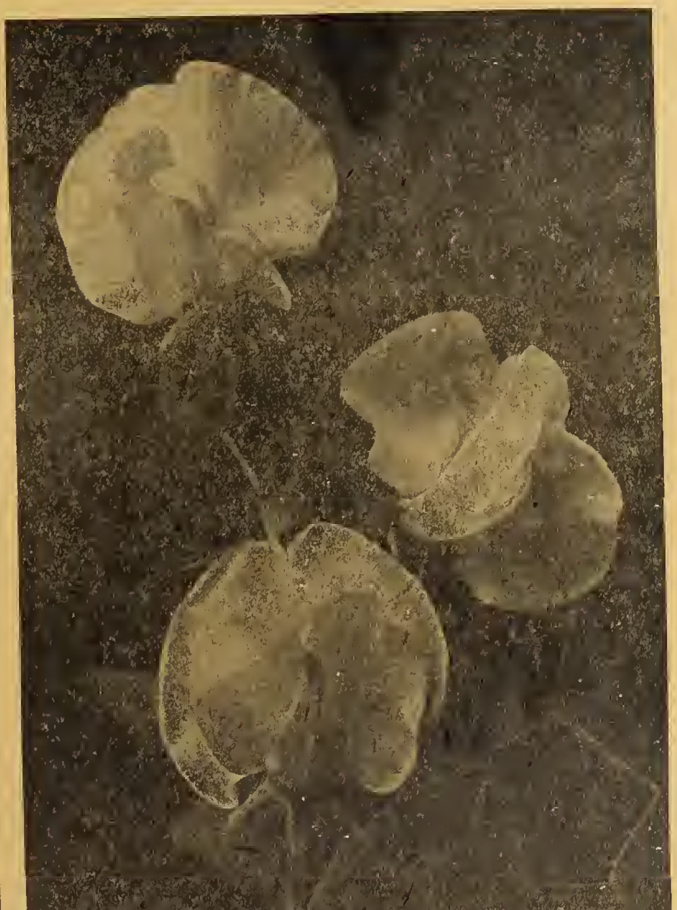
The greensward is the canvas upon which all architectural and landscape effects are produced. A lawn may vary in extent from a few square feet at the side of the steps leading to the brownstone front of the city dwelling to the broad acres of extensive parks. It matters little whether the extent of a lawn be great or small, its inherent qualities are the same, and its intrinsic worth is determined by its character and the manner in which it is kept.

Green grass is not only of great economic value, but it is also of great aesthetic value. The herbage of the field is the primary dependence of all animal life, and it is the green color, the sweet fragrance, and the soothing effect of nature which comes from well-kept greenswards that make them so congenial to man. Grass is nature's balm and healing for all erosive scars. Nature abhors rough edges and broken places, and immediately proceeds to cover such ugly spots with green grass. Man likes to get his feet upon the soil, but better still upon the soft, yielding greensward. Rich rugs and carpets do not give the elastic spring that the well-made and well-kept greensward yields.

A lawn is the accompaniment of effort on the part of man to beautify the surroundings of his abiding place. The great increase of interest in suburban and rural life has caused a corresponding increase in matters pertaining to the making and maintenance of lawns. Suburban railways, the extension of electric lines into the country, and the return of man to natural ways of living are all factors contributing to the growing interest in matters pertaining to lawn making.

In general, a lawn should be beautiful and it should be useful. Its beauty depends upon the contour of the land, the color and texture of the grass, and the uniformity of the turf. The use of the lawn is to provide a suitable setting for architectural adornment and landscape planting. Every device should be employed when working with small areas of ground to give the lawn as great extent as possible. The buildings should be well back, the foundation not too high, and the grading of the ground should be slightly convex—that is, a gently convex, rolling surface from the base of the foundation to the street line—rather than concave. A convex surface tends to give the effect of increased area, while a concave surface seemingly shortens distance. The extent of a lawn is also amplified by preserving as large areas of unbroken greensward as possible. This means the use of trees and shrubs only upon borders or margins of the lawn, rather than a promiscuous dotting of them over the greensward.

The ideal soil for a lawn is available in but few cases where it is desirable to establish a greensward. Ordinarily the lawn in which a man is most interested is that immediately surroundng his abiding place. The soil of this immediate locality is, in general, greatly modified because of building operations or necessary grading. The soil with which one has to deal, therefore, is seldom a normal soil of the locality. In general, it is a portion of the surface soil mixed with more or less subsoil which has come from excavation in making the foundation of a house. Large lawns and parks are not, as a rule, so subject to difficulties of this kind as are small private grounds. The problem before us, then, is that of converting not a normal but an abnormal soil into a suitable and congenial place for the growing of grasses.



ELIZA ECKFORD

Through the skill of specialists the sweet pea has become a much larger and lovelier flower than before it took such a strong hold on popular fancy Plants are more robust, dwarf, branching, and bloom earlier and more freely, some varieties showing 3 or 4 blooms on a stem. Many new colors, deep, dark, brilliant and delicately lovely, have appeared in the blossoms, often in combinations exquisite and indescribable. There are flowers, too, of quite distinct shapes, some of which are a great improvement upon the sweet pea of the old type.

The ideal soil for grasses best suited for lawn making is one which is moderately moist and contains a considerable percentage of clay—a soil which is somewhat retentive of moisture, but never becomes excessively wet, and is inclined to be heavy and compact rather than light loose and sandy. A strong clay loam or a sandy loam, underlaid by a clay subsoil, is undoubtedly the nearest approach to an ideal soil for a lawn; it, therefore, should be the aim in establishing a lawn to approach as near as is possible to one or the other of these types of soil. In many localities it will, however, be very difficult to produce by any artificial means at one's command a soil which will approach in texture either of the types recommended. Our efforts, nevertheless, should be directed to attaining as closely as possible these ideals

Whether a pure sand or a light sandy loam is the foundation for the lawn, a top-dressing of 2 or 3 inches of clay should be given and incorporated with the first 4 to 6 inches of the sand, and after this, if possible, the area should be used for the production of some green crop which gives an abundance of vegetable matter. Soy beans, vetches, and Canada peas are suitable for this type of soil improvement. These crops, if allowed to occupy the land until their maximum growth is attained and then plowed under, will act very beneficially upon the structure of the soil in making it more retentive of moisture, better able to hold fertilizers applied to it, and less liable to allow the greensward upon it to be killed out in times of drought.

Before definite preparations are made for the seed bed, the surface of the lawn should be reduced to the desired grade. In larger areas a gently undulating or broken surface is much more pleasing than a uniformly graded surface. Such a surface also adapts itself better to plantations of trees and shrubs. For small grounds of less than an acre in extent the grading should be comparatively uniform and of the simplest possible character. The general statement made in regard to the contour of the surface is sufficient guidance in grading such small areas.

Since the lawn is intended to be a permanent feature of the decoration of a place, its endurance or span of life is of unmost importance. In general, grass seeds are small and the surface seed bed for the reception of these seeds need not be more than one inch in depth; but since the grasses, as they become established, send out long, lateral feeding roots, it is necessary that the area containing the available food for these plants should be amplified. This object can only be attained by deep cultivation and thorough preparation of at least 8 to 10 inches of the surface soil. The soil to this depth should be made rich and should be put into an ideal condition for the development of plant roots.

The mechanical operations of preparing the soil can be carried on by the use of the modern plow if the area is large enough, or by spading if the area is small. The seed bed should be thoroughly and frequently stirred, so as to grind the soil particles together as much as possible for the purpose of reducing them to a uniformly fine condition and to liberate plant food. Cultivation should also have for its object the destruction of weeds which may interfere with the establishment of the lawn or which may be detrimental to it after it is once established.. After the soil has been thoroughly plowed or spaded it should be carefully fined by harrowing or raking, after which it should be thoroughly compacted by the use of a lawn or field roller and the surface again loosened by the use of a steel-

Continued on Page 402

Deciduous Fruit Culture.

BY J. W. MILLS, POMONA, CAL.

CALCULATING THE COST OF COMMERCIAL FERTILIZERS.

In a recent issue we advised one of our subscribers to figure the cost of commercial fertilizers on the unit basis and we have been asked to explain it. If unit system is used by the wholesale dealers and the unit is one per cent or 20 pounds per ton, the following examples are taken from Harris and Myers:

Suppose we buy some dried blood said to contain 10.50 per cent of nitrogen, equivalent to 12.75 per cent of ammonia. It is said to contain 12.75 units of ammonia. Quoted at $2.50 per unit, a ton would cost $31.875. This would figure out a little more than 15 cents per pound for nitrogen. If it contained 10.50 per cent of nitrogen, or 210 pounds per ton, at 15 cents per pound it would cost $31.50.

If you can dissolve bone black guaranteed to contain 16 units of available phosphoric acid at 70 cents per unit it would be $11.20 per ton.

This is cheap phosphoric acid, only 3½ cents per pound.

For the purpose of converting certain chemical compounds into the equivalent of another the following rules are used:

To convert nitrogen into an equivalent amount of ammonia multiply the given amount of ammonia by 1.214.

To convert ammonia into an equivalent amount of nitrogen multiply the given amount of ammonia by .8235.

To convert a guaranteed per cent of nitrate of soda to an epuivalent of nitrogen multiply the per cent of nitrate of soda by 16.47.

To convert a guaranteed per cent of sulphate of potash to an equivalent of potash multiply the per centage of sulphate of potash by .54.

To convert muriate (chloride) of potash to an equivalent of actual potash multiply the amount of muriate of potash by .63.

To convert actual potash to an equivalent per cent of sulphate of potash multiply the per cent of actual potash by 1.85.

To convert potash of an equivalent of muriate (chloride) of potash multiply the per cent of actual potash by 1.585.

The grower cannot expect to get 2000 pounds of nitrogen. phosphoric acid and potash when he buys a ton of fertilizer containing them even if he does not want anything else. The nitrogen is a gas and has to be in combination with some base or heavy material and other gases. Potash is a basis of a strong alkali and can not be used pure. It must be mixed with either sulphur and oxygen when sulphate of potash is used or with chlorine when the muriate of potash is used. When sulphate of potash is used over half of its weight is made up of sulphur and oxygen. In every 100 pounds of potash there are 120 pounds of sulphur and oxygen.

In 100 pounds of actual nitrogen obtained by using nitrate of soda you must use 900 pounds of soda and oxygen. These two elements can be had from elements that are comparatively uniform in quality. but with phosphoric acid it is different. The bone may be raw (not treated with acid), in which case the phosphoric [illegible] not soluble in water and con-[illegible] very hard for the plants to use. It is then known as unavailable. It will require a chemical analysis to determine the amount of available phosphoric acid it contains. There will be found some nitrogen in the bone also, and the amount of that will depend upon how the bone has been treated. If phosphoric acid could be obtained in as pure and available a state as nitrogen or potash we would then have to use with 100 pounds of it about 600 or 700 pounds of lime. There are always a number of other minerals in the bone that we need not buy. but they go to make up the bulk.

Now, suppose we buy a ton of fertilizer that contains 1500 pounds of bone, 300 pounds of nitrate and 200 pounds of sulphate of potash, what should it be worth?

We will say—

1500 ℔ raw bone contains 3.5 per cent. nitrogen.........	52.5 ℔
300 ℔ nitrate soda, 96 per cent pure, 16 per cent. notrogen..	46.08 ℔
	98.58 ℔
1500 ℔ raw bone contained 21 per cent phosphoric acid....	315 ℔
200 ℔ sulphate potash, 50 per cent actual potash..........	100 ℔

Reckoning the phosphoric acid at 8 cents per pound, a high price for it in raw bone, 315 pounds will cost $25.20, making the raw bone cost $33.60 per ton, but the nitrogen in it is worth $11.20 per ton, making the actual phosphoric acid part cost $22.40 per ton.

Reckoning the nitrate at 16 cents per pound. 46.08 pounds will cost $7.37. which is for 300 pounds. or three-twentieths of a ton, equaling $53.60 per ton.

Reckoning the actual potash at 7 cents per pound. 290 pounds of sulphate of potash will cost $7, or $70 per ton.

Then we have—

1500 ℔ raw bone at $33.60 per ton	$25.20
300 ℔ nitrate of soda at $49.20 per ton................	7.37
200 ℔ sulphate potash at $70 per ton...............	7.00
2000	$39.57

Had this fertilizer contained but 280 pounds of actual phosphoric acid instead of 315 pounds it would have shown that 170 pounds of some kind of filler had been put in. The difference of 35 pounds of phosphoric acid shows that it was 21 per cent of the amount of bone that was missing.

THE ADHERENCE OF COPPER FUNGICIDES.

The Experiment Station Record gives a summary of experiments made to determine which solution of copper fungicide will stick the longest to plants upon which they have been sprayed. It has been determined by field experiments in nine different districts. The different solutions being sprayed upon the vines in 2 or 3 per cent. solutions for the Bordeaux mixtures and one per cent. solutions for the verdigris. Eighty gallons of spray material per acre having been used for the first treatment, and 100 gallons for the fourth treatment. Summerizing, the adhesiveness of the different solutions may be ranked as follows, based upon the average of all the investigations. Natural verdigris was the most adherent, followed by what is called an adherent mixture of verdigris, Bordeaux mixture, and Masson's mixture. All the solutions were found to be more adherent if applied fresh. Bordeaux mixture preserves its adherence for a long time if the temperature is high, while some other mixtures and especially those containing soap rapidly lose their adhesiveness when the temperature becomes very high.

DRY ROT ON GRAPES.

The French experiment stations have been testing sprays for this troublesome disease, in both the liquid and dust form. In addition, comparisons were made of the effect of removing part of the leaves and reducing the amount of nitrogenous fertilizers. In all, six forms of powder and about one dozen of liquid were used in the tests. The results showed that in a season unfavorable to the development of this disease, no treatment seemed to show any reduction in the disease from that observed in the check plots. but observations show that in seasons favorable to the development of the disease fungicides are of much benefit. The disease seems to thrive most when there is an abundance of nitrogen in the soil. This is no doubt due to the vines putting on a more dense foliage which in turn makes the conditions favorable for the development of the malady.

MULCHING STRAWBERRY VINES.

Experiments in mulching strawberry vines at the Tennessee experiment station showed that when field bean straw was used, the plants made a much better growth than when mulched with grass. This is a good thing for strawberry growers in the California bean sections to know.

MILDEW ON GRAPES.

In a French bulletin the author recommends washing grapevines with a mixture of water 100 liters, sulphuric acid 15 liters, and sodium hyposulphite 1 kg.

This application should be applied to the vines between December 1 and February 1, or an application of a 10 per cent. solution of sulphuric acid may be used. This should be followed during the season with other treatments, for the first of which is recommended a mixture of copper sulphate 1.5 kg., lime 0.75 kg., and water. For later treatments the quantity of copper and sublimed sulphur is increased about 50 per cent. These proportions will make about 1 hectoliter of fungicide.

STRINGFELLOW METHODS.

In the Rural New Yorker is an article in which the author reports that fruit trees root and top pruned according to the Stringfellow method have not succeeded as well at the Missouri station as trees planted and pruned in the ordinary manner.

Peaches have been less injured by the Stringfellow method of pruning than apples, and where the trees pruned according to the Stringfellow method have lived over the first summer they have invariably developed into good trees. The author notes that some commercial growers throughout the state report excellent success in planting and pruning according to the Stringfellow method, and others much better results by the usual method.

It is believed that the method of stub-root pruning and cutting the stock back to 12 to 18 in., according to the plan advocated by Mr. Stringfellow, has been of great service in showing that it is not necessary to retain anything like the large quantity of fibrous roots which was formerly supposed. Many large growers are now cutting back the roots of trees much more severely at planting time than heretofore.

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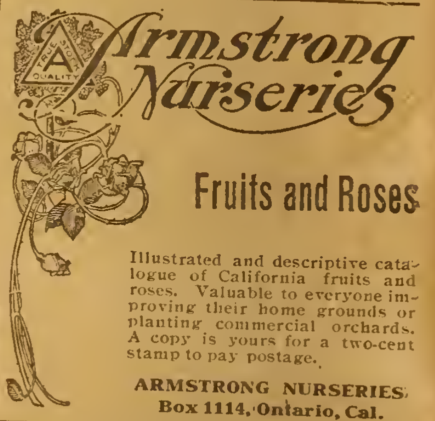

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Practical Farm Science

PREPARING LANDS FOR IRRIGATION.

The United States Department of Agriculture has issued Bulletin No. 145, of the office of experiment stations, describing methods of preparing land for irrigation and applying water to crops in different sections of the arid region of the United States. In this bulletin the methods of getting rid of sage brush, smoothing the ground, building laterals and distributing water over the fields as developed by the experience of farmers in irrigated districts are brought together and described. The tools and implements used are illustrated and the cost of the work based upon actual examples in different states, are given. The purpose is to afford beginners a reliable guide both as to the cost of bringing wild land under cultivation and methods best suited to different soils, climates and crops. The facts included in this bulletin have been gathered by the irrigation investigations of this office, acting in co-operation with the State experiment stations and state engineers' office.

The bulletin brings out the fact not well understood, that the cost of preparing the land for irrigation is in many instances greater than the cost of building canals and reservoirs. Detailed figures of the cost of checking land show that it varies in certain districts in California from $9.96 to $18.08 per acre. This is more than twice the cost of the canal system in the San Joaquin Valley, California, which is given in the report of the Census Bureau for 1902 as $4.99 per irrigated acre. Where the preparing of the land is contracted for the cost of checking varies from $7.50 to $20 per acre. The price of preparing land for flooding is much less, but is $5 per acre in Wyoming. The need of a better understanding of this particular branch of irrigation practice is becoming more and more important. Reservoirs and canals are but means to accomplish a purpose. That purpose is to increase the products of the soil. The value of the ditch or reservoir depends upon the acreage of land which it will serve and the increase in the value of the products which the use of water will bring about. The time is coming when the most important problems connected with irrigation will be the best means of applying water and not, as at present, those of canal and reservoir building.

About thirty different methods of applying water are now in use. This does not mean that there are thirty distinct systems, but includes the different ways of preparing land by checking, compartments, deep and shallow furrows, flooding, sprinkling and subirrigation. This bulletin gives some of the results of a series of different methods of applying water and the difference in loss of water by evaporation in deep and shallow furrows and in flooding. About one and one-half times as much water was needed to irrigate an acre of land by flooding as was required in furrows twelve inches deep. About one and one-third times as much water was needed to irrigate in furrows three inches deep as in furrows one foot deep. A saving of one-third of the water by the adoption of a better system would mean not only increased profits to farmers, but a large increase in the acreage which would be irrigated from canals or reservoirs.

COST OF TILE DRAINAGE.

The basis of an estimate of the cost of drainage per acre is the cost of individual drains of different sizes laid at different depths. Until such data is known no correct estimate of the cost of the drainage of a given tract can be made. A drainer of experience may look at a field or farm, and from his knowledge of the cost of work which he has performed on similar land may approximate the cost per acre without knowing definitely what material will be required. The most convenient unit to use in making estimates is the 100-foot length of finished drain. In systematic drainage he should know how many feet of lateral drains will be required per acre. To illustrate the matter in hand we may say that one acre, drained with parallel lines 33 feet apart, will require 1320 feet of drains; at 66 feet, 660 feet; at 100 feet, 440 feet; at 150 feet, 290 feet. Supposing that the lateral are to be 4-inch tile and cost $1.50 per 100 feet laid on the ground, and that the digging of the ditch and laying the tile will cost $1.50 per hundred feet, and filling of ditch 5 cents per hundred feet, the completed ditch will be $3.05 per 100 feet. This is for a depth of 3 feet to 3½ feet. If greater depths are necessary an increase of 6 cents per 100 feet should be added for each inch of depth beyond 3½ feet.

Using the above figures, an acre drained 33 feet apart would cost $40.26; 66 feet apart, $20.14; 100 feet apart, $13.42; 150 feet apart, $8.95. To this must be added the cost of intercepting or outlet drains, which should be charged to the entire tract for which they afford drainage. The expense of laying out and superintending may be put at from 5 to 8 per cent for ordinary work. These are the elements entering into the cost of tile drainage. In the above example the entire area is to be drained at some uniform distance apart. Such drainage is done by treating the lower levels which gather the drainage water from the higher areas. This is done with comparatively few lines, and the cost, when charged against the entire farm, may not run higher than from $4 to $7 per acre. Such farms are called "tiled farms." They cannot be said to be underdrained. In some instances an expensive outlet must be provided by means of a main which passes through the lands of adjoining owners.

With such varying contingencies attending the work of draining land, it cannot be expected that the price at which one tract of land is drained will form a criterion by which to judge of the cost of another, only as the two may resemble each other in location, soil and general requirements. Each tract should be estimated separately. The rule of averages does not apply in estimating the cost of tile drainage.

BIRDS VS. FRUIT.

Bird life in California has been on trail by the United States Department of Agriculture and the verdict, in the main, is not guilty. Some minor offenses have indeed been proved, but extenuating circumstances in nearly every case justify an acquittal. Fruit growers have a very general prejudice against birds, bringing against them charges of destruction that it would be hard to substantiate. The report of the Department of Agriculture ought, therefore, to be carefully read in order that the farmer may not unwittingly kill or banish his very good friends.

CONTROLLING GREEN SCUM.

Experiments at the Nebraska Station in tanks supplying water for stock are briefly reported, the conclusion reached being that "tanks may be kept free from green scums by treating with copper sulphate at least three times during the heated portion of the summer. Adding the copper sulphate directly at the rate of one-half pound copper sulphate to 75 pounds of water is the more effective method of treatment. Where this treatment is used the copper sulphate should be placed in a coarse sack and drawn back and forth through the water until dissolved."

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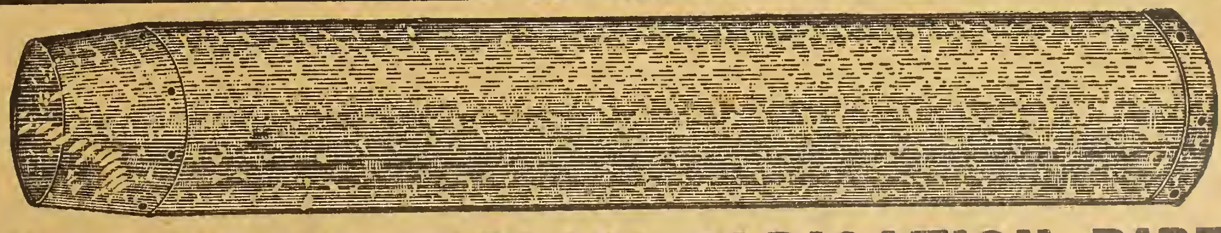

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General Agriculture

PRUNING AND THINNING DECIDUOUS FRUIT.

The pruning of deciduous fruit trees begins at the time or planting, and must be practieed continually while the trees live. When apricot trees are planted they should be trimmed to a single stem, and cut off at 18 to 20 inches from the ground. These will throw out shoots vigorously, and frequently two or three shoots from one butt. The shoots must be thinned out, leaving not more than four or five, no two of which should come from one bud nor be directly opposite.

The first shoot should start twelve inches from the ground, and the others in such a manner as to divide the space and make the branches balance leaving the top shoot to make the central part of the tree.

It will be necessary to go over the trees several times the first year to remove shoots that may start where not wanted, and this is more readily done while the shoots are tender enough to pinch out. No general heading back should be done the first year, as it tends to dwarf the tree, though if some of the limbs are making an overgrowth they should be pinched back.

The pruning for the second year should be done in January, as the trees will not be dormant until then if they have been kept in a thrifty condition. The first year's growth should be cut back to within five to ten inches of the body of the tree, and all forks should be cut out, even if it necessitates forming a new head, for it is much better to lose some growth on a young tree than to take the risk of splitting down when the tree begins to bear fruit.

When the shoots start for the second year's growth take off all that come out on the under side of the limbs and thin to two or three as may be needed to balance the tree, bearing in mind that an apricot tree always inclines toward the coast breezes.

The second year will require much more attention than the first year, in order to keep off suckers and all lateral growth that may start on the under side of the new limbs, the object being to make the limbs grow as near upright as possible.

The remark on heading back holds good for this year also.

The trees will become dormant earlier the second year than they did the first, but ought not to be trimmed earlier than January, so that the ends of the limbs will not be exposed to the drying winds so long before the sap begins to flow, and consequently will heal over better.

The second year's growth should now be cut back to within fifteen to twenty inches of the old wood, except the central stem, which may be left twenty-four to thirty inches long, depending on the number of laterals it may have thrown out.

When the new shoots have about six inches growth they should again be thinned down to two or three leading limbs on each branch, and all taken off that tend to turn down or out at right angles; but do not take off the fruit spurs. The trees will need to be gone over about three times before July to remove suckers and lateral growth that may start on the lower side of the limbs, as the tendency in the third year is to make an immense growth of downward laterals, and these must be taken off so as to develop wood that is to be left for fruit. If the orchard is on good land and has been properly watered and cultivated the trees should now be large enough to begin to yield fruit.

The object in trimming during the first two years and the first half of the third year, has been to grow a vigorous upright tree with strong limbs, capable of carrying a heavy load of large fruit and to get the fruit as close to the body of the tree as possible.

There will be a few specimens of fruit the third year, and as soon as these are gathered the trees should be summer pruned for the first time, care being taken that the land shall have been allowed to become moderately dry, so that the trees may be partially dormant. If the downward growth of laterals has been kept cut off, all that remains to be done is to cut off about one-half of all this season's growth all over the tree, using the same judgment as before with reference to prevailing winds and symmetry of tree.

The only pruning that will be necessary the following winter will be to take out cross limbs and sprouts that may have been overlooked in the summer.

When the tree comes into full bearing they will require but little pruning, though all the long shoots that come out should be cut back as soon as the fruit is gathered, for the fruit on these twigs and slender limbs is always small and exposed to sunburn.

When peach trees are planted they should be cut back to a single stem, and cut off at 12 inches from the ground, but instead of allowing a trunk to be formed below the branches they should start branches at the ground, as well as along the stem. Particular care should be taken that these branches grow nearly upright, so as to form a thick, self-supporting tree.

The pruning for the second year should be done in January, when about one-half of the last year's growth should be cut off, and the tree thinned so as to make it balance.

The new shoots will start at the base of the limbs that have been cut back, as well as at the point, and those at the base should all come out this year. A good rule with peach trees is to cut off about one-half of the last year's growth for four or five years.

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Keep your lighter honey separate from the darker grades.

POTATO BLIGHT.

We have never suffered very seriously from potato blight in this State. but that is no sign that we never shall. In the Eastern states it is a very serious disease in the important potato-growing districts, especially what is known as the "late blight," which is very difficult indeed to subdue. The remedy is the Bordeaux mixture, and successs depends on the persistence and thoroughness of the application. In regard to this trouble a correspondent writes:

"I believe that there are many farmers who still do not understand the principle of spraying for blight, and until they do they never will do very much effective work in bad years.

If we could dip a hill of potatoes into our spray mixture four or five times during its growth period that hill never would be struck by blight or its tubers by rot, for we would have coated leaf, stem and stalk, the under side of the leaves as well as the upper.

Now if we went over a field of potatoes with a sprinkler and did a very good job coating the top of the leaves, and weather conditions were favorable, we might not have much trouble with blight; but suppose we get a strong wind (with other conditions favorable to blight growth) which blows out the vines badly, exposing the under side of the leaves, these, having no spray mixture on them, because it is impossible to get it on the under side of the leaves with a sprinkler, would be open to the attack of the blight spores, and our field would not be much better protected than if we had never gone over it. How often we hear some farmer say: "I went over my potatoes with Bordeaux, and they were all right until we got a heavy wind, and then they were black in a few days," simply because the wind had blown the under side of the leaves where the blight spores could the more readily land upon them, and being unprotected by any mixture, were open to attack.

The more force we get to our spray the better work will be done, as it will be forced in among the foliage. I have never been able to do first-class work with the five-gallon compressed air or knapsack sprayer. Better work can be done with a good four-rowed handpump machine, but even this will not do here on the Coast; a power spray where a working pressure of from sixty to seventy pounds can be maintained, is needed.

The sal-soda-copper-sulphate mixture gave better results as spray mixture in our experimental field this year than the regular Bordeaux, and, I believe, is destined, in bad sections for blight, to take the place of the regular Bordeaux. This is made by using sal soda in the place of lime in making Bordeaux mixture, and does not leave anything whatever in the mixture to clog the nozzle, as lime is apt to do unless the mixture is made right.

AGRICULTURAL NOTES.

Make good use of the sun extractor. Generally one-half ounce of comb will hold one pound of honey.

Bee men have no winter problems in California.

Colonies with young queens are not so apt to swarm as those having older ones.

Italians will resist robbers much better than the black or hybrid bees.

The bee man who reads is the man who succeeds, because he is a man that wants to keep up with the times.

When looking for a queen it is well to remember that she is more easily found on a fine day when most of the bees are afield gathering nectar.

Sixty pounds of surplus honey per colony in a season is a fair average in most localities.

The color of honey varies greatly, ranging from water white to a very dark brown.

Bottled honey should be of fine flavor and light in color, dark honey looks bad in glass and is a drug on the market.

Light colored honey is gathered from such flowers as clover, alfalfa and mountain sage, while the dark is gathered from buckwheat and autumn flowers.—M. D. Whitcher.

Of Interest to Fruit Growers

Sometimes it pays to take the first market. Sometimes it pays to wait until your fruit is dried. I will furnish free to all producers of Dried Fruits a compilation of the stocks of Dried Fruit in all the largest cities in Europe and the United States. After seeing this report you will know when to sell and at what price. My estimates were correct in 1904, when prunes sold at 1 3-8 bag basis. I estimate apricot and peach prices. Contracts made by or through me will be safe. I never have had a draft rejected or unpaid. Reference: American National Bank, and Bank of California, San Francisco.

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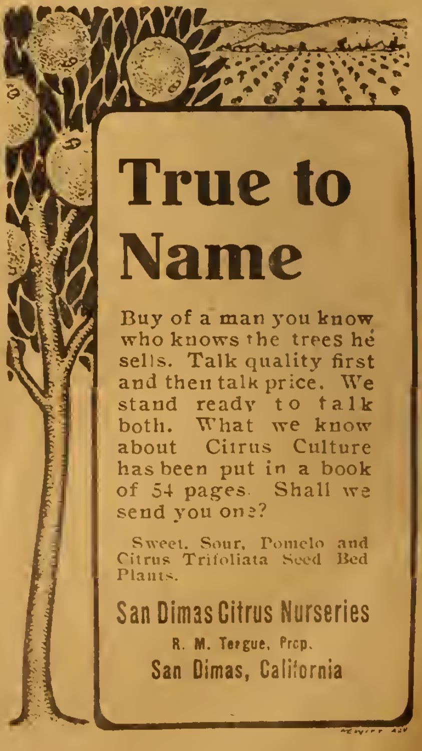

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With the Citrus Growers

BY J. W. MILLS

CITRUS FRUIT GROWING IN THE GULF STATES.

Farmers' Bulletin No. 238 treats of this subject in a concise form and sums up the occupation as follows: "The growing of the finest citrus fruits is a horticultural accomplishment not surpassed in any line of the art. There are very few agricultural occupations that require an equal amount of judgment and very few that give as remunerative a return for the mental outlay. Everyone who is willing to pay the price, either in labor or in dollars, can grow oranges and grape fruit, but only he who is so constituted as to derive pleasure in exercising his mental faculties to their fullest extent can produce fruit of the finest quality. There is a very long series of conditions, from the choice of the stock into which the bud is to be placed to the delivery of the package of perfect fruit to the consumer, which must be met successfully. If any one of these links in the chain is broken, first place cannot be obtained. Good judgment with previous knowledge must be exercised in the choice of stock, the bud, the soil, and the location of the orchard, in the cultivation of and the fertilization of the crop, in the treatment of fungus and insect diseases, in picking and packing the fruit, and in selecting a market for its disposal.

The production of the finest oranges requires years of most careful study and as diligent attention as the most intricate business operation. Unless the citrus grower is in full sympathy with his surroundings and in love with his work, he will as surely fail to produce the best results as would be the case in any other occupation."

These comments are certainly applicable to California as they deal with men and methods, but in the discussion of the climatic conditions that govern citrus culture in the Gulf region, the points covered do not apply to California at all. In that region it is stated that where the temperature does not fall below 18 degrees above zero nor rise above 100 degrees, and where there is sufficient moisture, citrus fruits may be raised, intimating that the best fruit is not always raised where those limits are reached, though as a rule, such limitations mark the locations in which it is considered safest to grow citrus fruits. In that region it is considered impossible to grow oranges if the rainy season comes during the time the oranges are maturing as it interferes with gathering and marketing. We do not consider this a serious disadvantage, in fact the bulk of our fruit is harvested and marketed during our wettest season. It is not an uncommon occurence to hear a grower who is in the midst of harvesting his crop, state that he wished it would rain and stop the rush of fruit to market, fearing that the large shipments would have a depressing tendency on the prices. It often happens that a rainy period will cause the market for oranges to strengthen.

The bulletin states that the more nearly the northern limit of the citrus belt is reached, the more sprightly and deliciously flavored is the fruit, some of the best being grown where the trees are in danger of being frozen out.

An ideal climate is described as one where the rainfall occurs after the fruit has been shipped and before the new crop begins to ripen, and where there is not a continued cold of less than 26 to 27 degrees, and preferably not above 100 degrees. A temperature 18 above zero while the trees are dormant will strip the trees of their leaves and if the sap is flowing it will kill the trees to the ground. These conditions do not prevail in this state as there are numerous places where the lowest temperature above mentioned does not cause a serious dropping of orange leaves and the trees are not seriously injured. We, however, do not know what would happen should we have a severe freeze while the trees are in a state of rapid growth. We do know, however, that freezes which will kill almonds that are practically full grown, will not affect the blossoms of orange trees, showing that the orange has a remarkable resistance to cold in our climate.

TIMELY HINTS.

If there is any one thing that can be depended on to conserve the moisture in the soil and utilize that in the atmosphere, it is deep cultivation. This has been fully demonstrated by experiments carried on at Berkeley, as deeply cultivated soils showed much more moisture than those that were cultivated shallow, and where irrigating water is scarce now is the time for plowing or cultivation before the heat of summer sets in. It will be found that this deep cultivation will develop moisture in the soil from the condensation of the moisture of the atmosphere in the cooler soil, especially where there has been a liberal use of stable manure or plowing under of green fertilizer.

There are many who have been resting, comparatively, from cultivation for the past months, but now the ground must be put in order for the summer either by plowing or cultivation. Thorough work will enable the soil to imbibe much more rain if it should fall and it will not be safe to leave it too long, hoping for more rain, before stirring, for experience shows that we cannot always depend on enough rain to do any good after the 1st of April. The season hinges on what rainfall we get before that time.

The rains came very opportunely and the weather stayed cool and damp for an unusually long time this spring, giving all ample opportunity to prepare for the growing season by plowing, cultivating and generally getting rid of all weed growth left over from the winter. If the ground was left in a fine state of tilth it will be found that the crop of summer weeds will begin to make their apearance above ground, and the sooner after that the ground can be gone over with a light harrow or cultivator the better, as they rob the ground very quickly of any moisture that may be left in it. We may still look for showers which will be a very great help in getting the surface of the ground in good condition for the coming season.

HOW LIME ACTS.

Lime enters into the composition of all plants and is undoubtedly as much a plant food as potash, phosphoric acid or nitrogen. A plant will not grow in the absence of lime, but this substance is so widely distributed in nature that practically all lands contains sufficient lime to supply the needs of the plants that may be grown on it.

The benefit derived from an application of lime is due more to its chemical and physical action on the soil than merely an increase of lime available as plant food.

Without going into detail the following are the chief chemical changes brought about through the agency of lime:

Lime as sulphate has the power to break up certain compounds containing potash in an unavailable condition. It also aids in the formation of double silicates of potassium and aluminum in which form the potash though available, is prevented from leaching out the soil. It promotes a rapid decomposition of the organic matter in the soil and causes its nitrogen to be converted into nitrates. This is the form in which nitrogen is best assimilated by plants.

If there is an excess of soluable phosphoric acid in the soil, its tendency is to combine with compounds of iron and aluminum and become unavailable. The presence of lime prevents this, and is even believed to be able to decompose any iron or aluminum phosphates which are in the soil so that the phosphoric acid may be utilized as plant food.

Thus it appears that lime, by its peculiar chemical properties, is capable of rendering available all three of the plant foods which may be in the soil in an inert form.

Another important function of lime is to correct the acidity of soils which are rich in organic matter. Such soils are frequently so sour that certain plants will not grow on them, yet they produce abundant crops after an application of lime. A moderate amount of lime also greatly facilitates the growth of nitrifying organisms which exist on the roots of leguminous plants and causes the nitrogen which these little helpers secure from the air to be converted into nitrates and in this form stored up in the soil.

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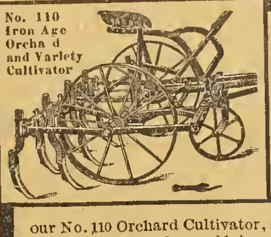
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E. G. Wood, Owner, at Nursery or Room 732 Huntington Building, Los Angeles, Cal.

The Ornamental Garden

BY ERNEST BRAUNTON, LOS ANGELES, CAL.

LARKSPURS.

The Larkspur (Delphinium) is a genus that includes annual, biennial, and perennial species, most of which produce flowers of varying shades of blue. The annual kinds, mostly varieties of Delphinium Ajaceis (the rocket larkspur), and D. consolida (the branching larkspur), are hardy plants that are largely grown for garden decoration. They are very showy, and in addition to blue produce flowers of pink, scarlet, white, purple, and other colors, and double or single blossoms. The rocket varieties are said to contain a principle that is poisonous or obnoxious to certain insects, and are often specially planted in gardens in districts subject to invasions of grasshoppers as a check against their ravages. Seeds of the annual kinds should be sown in autumn.

The perennial kinds are worthy of general cultivation, particularly species such as cardinale and nudicale that bear scarlet and crimson flowers, and sulphureum, the yellow flowers of which are used for dying silks in Syria, but it is on account of their beautiful shades of blue that Larkspurs are specially valuable as garden plants. The flowers are borne on spikes often five feet in height. The colors of the newer hybrids are almost indescribable, and embrace almost every possible shade of blue and purple. There are single and double flowered varieties. In addition to the greater variety of color, the garden varieties are larger in spike and flower and generally more floriferous than the parent species. They endure great heat without flagging in the least, if supplied with a fair amount of moisture, and in fact there is no flower grown in our gardens that can compare with Delphiniums in that respect.

To grow Larkspur well they should be planted in beds specially prepared for them; sheltered from rough winds, but not unduly shaded or close to large trees. They thrive best in a friable loam that has been deeply worked and well manured. Rotted stable manure is most suitable in such soils; a mixture of equal parts of rotted cow and stable manure for soils of a sandy nature. The plants need a fair amount of water during summer, and as little as possible during winter, so well drained beds are essential. The beds should be prepared during winter, and the plants set out in spring. The beds should be mulched early in the season, by which means strong plants are assured in one year even without the application of much water. The stems are brittle, and one stake at least will be required for each plant. After the main shoots have blossomed they should be cut away unless required for seed (which should be saved from the main spike of the finest kinds only) after which the side shoots will flower. When the stem has finished blooming it should be cut to the ground, when other shoots will follow. Delphiniums are most effective in mixed borders, in which they should be planted well back from the edges.

Old plants should be carefully divided in the spring, leaving one or more crowns to each division. Small pieces even if not supplied with roots will grow into fair plants, but require more attention in watering and cultivating. Larkspurs are easily raised from seed, which should be sown in autumn and winter in boxes or pans of fibrous soil. A succession of young plants will insure flowers during the whole of the summer and autumn, the plants blooming a few months after the seed is sown. Slugs and snails, if present, are sure to attack the young plants, and provision must be made to prevent their access to the young seedlings. If no such enemies are present, the seed may be sown in the open ground, and the seedlings transferred to their flowering quarters when about two or three inches in height.

GROWING POND LILIES.

The simplest and most economic way to grow water plants is a collection of large tubs or half hogheads, located in a sunny position and partly filled with soil. A much better plan is to make a pool by excavating the ground two or three feet. The walls should be made of brick, stone, or concrete, using cement for all the work. There should also be a waste-pipe at the bottom with a stand-pipe for overflow. In a basin eight or ten feet across quite a variety of plants may be grown, using wooden boxes or shallow tubs to hold the soil.

Those having fountain basins in their grounds can utilize them in the same manner. It is not necessary that there should be a continuous flow of water, but during the growing season enough should run in each day to prevent stagnation and to keep the plants in health.

While most water lilies will flower freely in contracted quarters, they will attain greater perfection, with much larger flowers, if they have abundance of room for both the roots and the leaves. Basins twenty to thirty feet in diameter, or even larger than this, are desirable for growing a good collection. In growing the lotus in the same basin with Nymphaeas, care must be taken to confine the roots of the former to a given space, as it has the habit of spreading in all directions.

COUNTRY SCHOOLS.

The rural school suffers more from inexperienced and poorly prepared teachers than from any other one cause. I hasten to say that not all teachers in the country districts are with little or no experience and of meager education. Some of our very best teachers labor from choice in the country. And then it often happens that the young teacher. with her first school in a remote country district, does a work of the very highest merit. I am persuaded that much of the teaching done in the one-room country schools will bear favorable comparison with the best teaching in our cities. No teacher who labors in the country need apologize for that fact; neither should she feel that the work given her to do is of any less importance than that undertaken in the more pretentious city position.

Country children are in most respects most happily situated. The beauties of nature smile upon them. and her myriad voices call to them in the solitude of field or forest. They have a healthful environment. The example of virtue and honor in the home and in the community is in the main before them. Duties many and continuous await them, and their labor is directed to definite ends. They have time for quiet reflection and opportunities to use their reason and judgment. Their environment is well suited to develop a strong body and an active, vigorous mind. No class of our youth gives greater promise of usefulness. These country children deserve and have a right to demand school privileges in every way equal to those accorded the children of towns and cities.—Hon. John Riggs. Iowa. State Supt. of Schools.

PUDDLING TREE ROOTS.

Since the adoption of the plan of puddling roots of trees before packing or planting by many nurserymen, its benefits have been so manifest that one by one many of the others are following in their wake. In truth, it is a very great help to trees. The puddle is formed by taking some heavy soil, throwing it in a large tight box set in the ground, and mixing it with enough water to form a thick paste, into which the roots of the trees are plunged. It must be thick enough that when the roots are withdrawn from the puddle there is a thick coating of mud adhering to them. Whether for shipping or for planting it has been found of the greatest use in preserving the stock in good condition, as it naturally would. There is a moist coating of soil close to the roots, affording moisture and keeping out air; and this, as all planters know, is half the battle for success with the trees.

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The main object of the Society is to enable both professional and amateur flower and plant growers and fanciers to meet each month (or more ofteu) for consultation, discussion, exhibition of seasonable plants, etc., and also to hold flower shows and plant exhibits at such seasons of the year as may be best suited for the purpose. (1906 Exhibitious in May and November.)

The capital stock of the Society is fifty thousand dollars, divided into ten thousand shares of five dollars each. You are asked to become a subscriber for one or more shares of stock, at the par value of five dollars each.

Please make your check payable to the order of J. Dietcrich, Treasurer, and seud to the Secretary, Ernest Braunton, 115½ North Broadway, Los Angeles, Cal.

By Order of the Board of Directors.

WALTER RAYMOND, President.
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In the Vegetable Garden

BY ERNEST BRAUNTON

THE SOY BEAN.

This leguminous plant, probably native in China, is the most important legume of China and Japan. Its remarkably high percentage of protein (34 per cent) and fat (17 per cent) attracted the attention of Europeans some twenty-five years ago. Since that time it has been cultivated to some extent both in Europe and America, chiefly as a forage and soiling crop. In the Orient this bean and the various food produts made from it are so largely consumed that it is perhaps the most important food plant next to rice. The soy bean is eaten to a small extent boiled like other beans, but in China and Japan it is elaborated into a variety of products, all of which have a high percentage of protein, and when eaten in connection with the staple food, rice, which is so deficient in that constituent, helps to make a well-balanced dietary. Some one of these products is eaten at perhaps every meal, and by rich and poor alike, especially in the interior of these countries, where sea food is not obtainable. One of the most important of these preparations is shown, and it is the only one that has been introduced to any extent into other countries, here it is shown as soy sauce. To make it, a mixture of the cooked beans with roasted wheat flour and salt is fermented for some years in casks with a special ferment. The result is a thick brown liquid having a pungent and agreeable taste.

There are also several varieties of bean cheese or similar products made from this legume which are very important foods. These are natto, miso, and tofu. Natto is made from soy beans that have been boiled for several hours until very soft, small portions of the still hot mass being wrapped securely in bundles of straw and placed in a heated, tightly closed cellar for twenty-four hours. Bacteria, probably from the air or straw, work in the mass, producing an agreeable change in its taste.

For tofu, the soy bean, after soaking and crushing, is boiled in considerable water and filtered through cloth. To the resulting milky fluid 2 per cent of concentrated sea brine is added, which, probably by the virtue of the calcium and magnesium salts present, precipitates the plant casein, which is then pressed into little snow-white tablets. Tofu is sometimes cooked in peanut oil before it is eaten. In natto and miso the action of minute organisms play an important part. In tofu there is no such action.

WINTER BLIGHT OF TOMATO.

The control of this disease has been thoroughly worked out in Eastern States for potatoes, and in the same method will no doubt prove effective here. Treatment consists in spraying with Bordeaux mixture; in climates with frequent rains in summer this is done several times at regular intervals, in order to keep the vines well covered with spray at all times. In California this would not be necessary. Spraying should be regulated entirely by the rainfall. If there is no rain there is no danger whatever of winter blight, and no need of spraying.

If rain occurs while the vines are in growing or bearing condition, spray thoroughly with Bordeaux mixture immediately after the rain stops. If there should be frequent showers a day or a few days apart, spray between showers rather than wait too long. Aim to cover the fruit and all parts of the vine with the spray. If the mixture shows on the fruit when picked it can be easily wiped off. Bordeaux mixture is not poisonous. Repeat the spraying after the next rain, if any occurs; but continued spraying in dry weather is not necessary. One good spraying at the right time last fall would probably have saved thousands of dollars in the winter tomato crop.

It is advisable, in regard to this disease on general principles, not to plant tomatoes on the same land one year after another, although the Phytophthora spreads so rapidly when conditions are favorable that this precaution could have little effect in preventing the blight.

THE VEGETABLE GARDEN.

Whenever a choice is possible for the growing of vegetables a site protected on the north and northwest by a hedge, fence, or any natural wind break, is to be preferred. If the ground is not level, a gentle slope to the south is the best. A garden so situated will produce the earliest crops.

A very important factor in the growing of vegetables is good soil. A light sandy loam, which will warm up early in the spring, will produce the earliest crops, but a soil that is a little heavier is the best for growing good vegetables in the summer and fall. Whenever possible, avoid a sticky,, clayey soil.

There are a good many diverse opinions as to the proper time to plow the vegetable garden, but the gardener is generally governed by the conditions of the soil he has to handle. Whenever practicable plow with a two-horse plow and plow deep. A good, thorough plowing will be beneficial for the whole season.

A good top dressing of well-rotted stable manure (cow and horse manure preferred) spread broadcast and plowed under before it dries out is the best for growing vegetables. In all well-ordered gardens you will generally find that a good high fertilizer and nitrate of soda is used to push along certain crops, such as celery, cabbage, onions, lettuce, corn, etc.

Before beginning to plant, it is a very good idea to have a definite plan of the garden. If possible, plant in long, straight rows, so that the cultivation can be done with a horse plow and diamond-toothed cultivator. Have all permanent beds, such as asparagus, strawberries, etc., to one side, so that they will not interfere with the plowing.

Try and keep your garden free from weeds by thorough cultivation. The proper time to kill weeds is before they come up. But whether your garden is clean or dirty, keep a horse and cultivator going through it every week or ten days to keep the ground soft. If your ground shows a tendency to bake after a rain, cultivate, and it will serve the double purpose of softening the ground and making it hold the moisture longer.

LABLAB BEANS.

There are several kinds of beans which, though articles of diet in Oriental countries, are used only to a limited extent in the United States, usually by Chinese or other residents of foreign birth or extraction. Lablab beans, asparagus beans, and mungo beans may be mentioned. The green pods of the asparagus bean are largely used as a snap bean. The pods are long, containing 10 to 16 seeds, more slender than the string beans and more slightly rigid along the middle of the two valves. Under the name of "tou kok" this vegetable is cultivated by the Chinese in some regions of California and is said to be finding favor with the white residents and is considered a valuable variety of the snap bean.

THE COW PEA.

The cow pea is grown both as a forage and for human food, but mainly as a fertilizer for the soil (green manure). Considerable quantities of the cow pea are consumed during the season, being gathered when the pods begin to change color and before they become dry. For winter use the dry peas are cooked like other dried beans and have a very agreeable flavor.

ANNOYING.

Mr. Gardner—Well, dear, how are the tomatoes you planted?

Mrs. Gardner—Oh, John! I'm afraid we'll have to buy what we need this year.

Mr. Gardner—Why, how's that, Mary?

Mrs. Gardner—I recollected today that when I did the planting I forgot to open the cans.—Puck.

Intensive cultivation should be practiced at this season in the vegetable garden to conserve the soil moisture.

CAPITAL PRIZE.

"Do you oppose the lottery down at our church?"

"Not me. I won a prize."

"You don't say so?"

"Yes, I married the young lady who had charge of the booth."—Chicago News.

It has been said that great wealth is an obstacle that prevents men from getting into heaven. We know of some that it has prevented from getting into the penitentiary.

Strawberry Guavas 3 years old, 2 to 3 feet, high, very straight. Balled and sacked and in most excellent condition. Price packed F. O. B. $20 per 100
TIM CARROLL, Anaheim, California.

Our Specialty **Burbank Crimson Winter Rhubarb**

APRIL, MAY and JUNE is the best time to plant for a heavy crop next winter. $1.50 per dozen, $7 50 per 100, $50.00 per 1000.

We still have a few thousand Fancy Navel and Valencia Orange Trees.

Wagner's Nursery Phones: Home, 1291; Sunset, 1297 Pasadena, Cal.

Greatest National Bank West of Denver and South of San Francisco

First National Bank

United States Depository for Government Funds

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SURPLUS AND UNDIVIDED PROFITS, $2,860,000

We are prepared to extend to the small depositor the same personal and careful attention that we do to our largest accounts.

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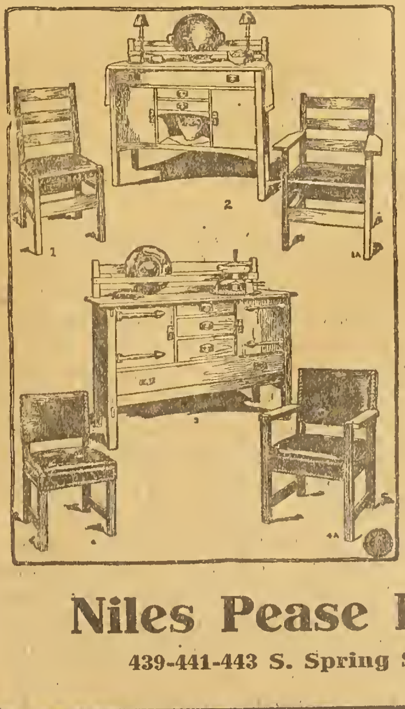

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Niles Pease Furniture Co.
439-441-443 S. Spring St., Los Angeles, Cal.

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Friday, April 27, 1906

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What Will Be the Effect? That California as a whole has received a most serious setback from the earthquake and fire at San Francisco will not, for a moment, be questioned. Whether the effect will be lasting can not even be prophesized at this time. Judging from experiences of Chicago, Galveston and Baltimore, we have reasonable ground to think that on the ashes of San Francisco will arise a city greater, grander and more beautiful than anything which exists today on this continent.

The spirit of the twentieth century is so pronounced in the blood of the San Francisco Argonauts that nothing can daunt their determination, and the greater their disasters the bolder becomes their fighting prowess. But in estimating the material effect upon the State we must remember that we are dealing with a proposition which does not offer a solution as do many which confront us; that can be explained on natural causes occurring at stated periods, such as storms and other elemental conditions. In this case we have no theory, so to speak, we have cold unexplainable facts and the more difficult of explanation because of lack of definite information which points out the cause.

* * *

Of all the accidents producing death and disaster which overtake us the earthquake is the most dreaded by the human mind. In thinking of it men are not usually governed by reason, but by instinct, by fear and by superstition, the more so because it is absolutely beyond human knowledge or ability to control. We may escape a cyclone or a tornado, as a rule, for they give evidence of their approach in atmospheric conditions before they strike, not so the earthquake. In the glories of the soft summer day it sweeps across a belt of country and cities fall in a moment of time. It is this uncertainty as to time or place where the blow may strike and the awful certainty of catastrophe that follows the well-developed earthquake which makes men such cowards about it. This fear becomes a sentiment which, when once well grounded, never can be eradicated from the mind.

* * *

It may as well be frankly recognized and as frankly said that the effect will be a bad one. It will scare thousands and keep them from emigrating to California, especially to Northern California, which just now was enjoying the highest per cent of Eastern tourist settlement of any section of the State. If San Francisco had been destroyed primarily by a great fire the loss of life might have been greater and the ruin more immense, but its effect upon the popular mind would have been far less.

Until the fact is widely established throughout the length and breadth of the land that Southern California is nearly 500 miles from the scene of the San Francisco horror, that it is not in the same atmospheric vibration, nor of the same geological formation, nor in the seismic belt at all, people will confound the facts and refuse to believe Southern California immune from earthquakes severe enough to destroy its towns as San Francisco was destroyed. For this reason we shall feel the effect of the earthquake all over the State—and for some time.

* * *

The question then presents itself, what is best to do? There is but one thing to do, go ahead and rebuild the waste places on a grander, cleaner, more substantial basis than they were before. Learn from experience to erect stronger, lower blocks on more enduring foundations. Use the best material and build against the accidents of time so far as lays in our power so to do. We may not be able to do this absolutely, but we can do much by profiting by the past.

A hundred years may elapse before another shock will effect this coast. Possibly no other such will ever occur, then why be discouraged? Now is the time for the citizens of California to summon up their fortitude, their strength of mind and their faith in the future. Lisbon was almost totally destroyed by an earthquake infinitely more dreadful than the one we have just passed through, 161 years ago, but it has never been seriously damaged by sesimic shock since.

* * *

No part of the earth appears to be free from the mysterious vibrations. While San Francisco and San Jose were trembling the ground under Moscow, in Russia, was quaking, showing the wide spread character of the disturbance. New York and New Orleans are just as likely to receive a visitation as are the towns on the Pacific Coast. So there is no cause to despair or to feel unnaturally alarmed for the future. Let us go about our business as becomes men and women born to build on the ashes of uncontrollable fire, and while recognizing the misfortune which has overtaken California let us neither be discouraged nor disheartened, but address ourselves with courage, calmness and determination to the task of restoring confidence in our State at home and abroad.

For a time sentiment will play its part; we cannot wholly remedy that, but it is equally certain that common sense and sterling values will play their parts. Our fields are quite as fertile as they were, and our mines as rich. We have more money in our banks than we ever had. Our resources in a dozen ways are vastly greater than a few years ago. Why hesitate? We will build up what has been torn down, and we will do it with such a hearty good will as to advertise our confidence and to compel admiration. We have not suffered more than Charleston suffered, and Charleston has nothing but harmless scars to show for her calamityfl Chicago built up again and outlived her trouble, and San Francisco and her sister towns will do the same, and so will California do the same.

* * *

Outlook for Trade Good. The moderation with which Wall street received the announcement of labor strikes in the coal-producing sections, and the fact that shares of the coal-carrying roads actually advanced instead of declining during the height of the controversy; and the further fact that the California misfortune had no perceptible effect upon Wall street, shows that the trade outlook is particularly strong at this time.

One of the most conservative yet progressive commercial papers of the Middle West, the Denver News, marks the period as highly satisfactory from a business outlook. It says the demand for iron and steel meets the capacity of the manufacturing plants far into the fall, when the assurance of a bumper harvest, the sixth in succession, means a further demand.

Thus far in 1906 railroad earnings have exceeded all records. This was partially due to the open winter, but mainly the results of liberal travel in all directions and a generous flow of goods to the farming sections, where the people are well able to buy.

The wool market is strong in Philadelphia, New York and Boston, which means much to Colorado and the neighboring states and territories at this season of the year, when shearing is about to commence. London is strong on colonial wools, which leads American buyers to meet asking prices in the West. The latter are far in advance of the average, and are well sustained by declining supplies.

A sign of the times at the East is a general advance in wages on the New York, New Haven and Hartford system of railroads, covering much of New England and involving thousands of men. The advance ranges from 10 to 25 cents per day for each man, and concedes the fact that the cost of living is higher than it has been in the past five years. Large cotton mill companies, corporations engaged in the woolen trade and other industrial concerns are also conceding advances in wages. This, bear in mind, is a boon to the retail trade, for increased wage scales are immediately followed by expanding purchases.

On the whole the prospects for the future were never brighter than they are right now.

* * *

Facts About Oklahoma.—The statehood bill which includes Oklahoma and Indian Territory, and which is now before Congress, opens the subject of the value of the properties possessed by these territories. As they are before the public, it may not be amiss to give some of their characteristics, they are interesting.

Oklahoma and the Indian Territory have four times the population of Montana and more than any New England state except Massachusetts.

Oklahoma alone in the election of delegate to congress in 1904 cast 109,145 votes.

Oklahoma's vote was 30,000 in excess of the total combined vote of Nevada, Vermont and Wyoming and was 7,000 more than the vote of Utah in the same election.

Live stock values for Oklahoma and Indian Territory, $91,622,723, or greater than that of the combined states of Idaho, Nevada, Utah and Vermont, and exactly that of North and South Carolina combined.

Farm products of proposed state for 1905, $58,056,112, or $7,000,000 more than those of Montana, Vermont, So. Carolina and Wyoming combined, and within $5,000,000 of those of N. and South Carolina combined.

Oklahoma and Indian Territory have 807 manufacturing establishments, with a capital of $13,661,979. This is nine times that of South Dakota; six times that of North Dakota; over twice the combined states of North Dakota, South Dakota and Nevada; very near the total for Montana; $1,000,000 more than Utah; one-half of Kansas and one-fourth of Colorado.

Oklahoma is not to be considered in the same class with Arizona and New Mexico. She is populated largely with people from the older states. She is not tinctured with Mormonism. Her people are educated, aggressive and thoroughly American. In this she excels Arizona and New Mexico, especially New Mexico, which has in it a type of Dago-Mexicans no nation should admit. Not so with Oklahoma.

* * *

Good Sign.—A good sign of the times is a tendency to quit appropriating so much money for rivers and harbors and giving it to develop rural mail routes and irrigation plants. Much of the money appropriated under the annual rivers and harbors bill is worse than wasted. It is always a log rolling measure, and much of the money is dumped into obscure creeks and imaginary water ways to please Senators and Representatives, who are merely after funds to grease their pathways to place. Rural routes and irrigation plants in the arid regions confer real services to the people who need them and whose upbuilding means the prosperity of the whole country. Everything that helps the farmer helps the nation, and money expended to add more productive land to our cultivatable area is always well expended.

FARMERS' INSTITUTES.

Upland, May 15 and 16.
Corona, May 2-3.
Anaheim, May 4-5.
Escondido, May 8 and 9.
El Cajon, May 11 and 12.
Chula Vista, May 11-12.

NEWS OF COUNTRY LIFE IN THE GOLDEN WEST

HORTICULTURE.

The Woodland Mail reports pear blight almost eradicated in Yolo county.

Riverside's output of citrus fruits this season will reach about 4000 car loads.

The Lemoore Winery is receiving orders for all of the muscat wines its vineyards will produce.

Fail Oaks is promising an early and abundant crop of peaches though the apricots will be a failure.

The Santa Paula Citrus Fruit Association, a new organization, shipped its third car of lemons this week.

The San Fernando Fruit Growers' Association has equipped its packing house with chemical fire extinguishers.

The Pomona Exchange orange house is now shipping 24 cars per week, and the lemon house about 6 cars.—Times.

A machine fruit wrapper has been invented which has a capacity of 72 oranges a minute. It will wrap a carload of oranges in a day and a half without marring the skin of the fruit.

The official statistics of Riverside County, as published last December, gave the value of horses in the county as follows: Thoroughbred, $3600; standard bred, $38,700; common $268,980.

The Sacramento Union reports that since the close of the cold rainy season the crops in the Samramento valley begin to look very promising fruits also are looking much better than two weeks ago.

The Ventura Free Press says the merchants of Ventura county will greatly miss the apricot crop this year. Men, women and children in the habit of gathering the fruit will not be able to do so this year.

Mr. Humphrey, near Fresno, has set 70 acres of new grapes to "lady fingers," a large white grape with superior shipping qualities and is said to be an excellent fruit for table use. It promises to be a very popular grape in California.

The orchardists in the Pajaro valley are beginning to renew their fight against the Codling moth. They will use tarred rope around the trunk, a few feet from the ground, to prevent the creatures from crawling back after they have been well shaken from the trees.

About three months ago, says the Riverside Press, "Fred Carroll was in one of the Citrus Union Packing houses when they were packing some navels for the foreign trade and he dropped his card into one box. Yesterday he was surprised to receive a letter from the party who bought this box of oranges away off in New Zealand. The fruit was reported to have been received there in excellent condition after its long journey."

AGRICULTURE.

Senator Jones of Garden Grove states that he will have 4000 acres of beets in the Talbert Bottoms.

The planting of asparagus is advocated on large lines in the Imperial Valley by parties familiar with the soil.

J. H. Vail of Fullerton estimates the cabbage crop of Fullerton, La Habra and Orange at a thousand car loads. He is offering $30 per ton.

The Salinas Sugar Factory destroyed by the earthquake will be unable to handle this year's crop which has been valued at $2,000,000.

Over 2000 acres of Government land in the vicinity of Holtville have been filed on within the last three weeks Crops will immediately be planted on this land.

Many of the alfalfa fields in Kings county which were supposed to have been ruined by water are coming out all right and will produce almost their usual tonnage.

The Wagner Bros. are cultivating 4000 acres of potatoes in the Anaheim district. Last year they shipped out 12,000 sacks, and they now have over 2000 sacks to market.

The Department of Agriculture in May gave instructions for the irrigation of 12,000 acres of land in the district of western Kansas known as the Garden City country.

For a period at least, Stockton will become the northern market depot for grain, breadstuffs and live stock. San Francisco will not be able to handle the bulk of this business for a long time.

The Department of Agriculture will establish experiment stations in the Imperial Valley, at Brawley, Imperial, Calexico, Holtville and other points, with a view of studying irrigation methods and possibilities in the Valley.

The statement is made by the Chino Valley Champion that 10,250 acres of beets will provide for the Chino Sugar Factory this year. The factory uses about two thousand tons of lime rock during the season which is now being received at the rate of two tons daily.

The Ventura Free Press states that when the two trustees harvest the potato crop in the Plaza, the merchants of Ventura will be put out of business. Apparently the trustees believe more money can be made from a potato crop than from flowers and shrubs with a gardener to tend them.

The dispatch about the overflow of water in Tulare Lake appears to have been a gross exaggeration and very little damage has been done, in fact, farmers claim they wish the water had run considerably higher as it would have irrigated their lands and greatly assisted agriculture. These ideas are gleaned from the Tulare Register.

LIVE STOCK.

The Imperial Creamery is making 800 pounds of butter per day.

Lemoore is shipping an average of 25 bales of wool to San Francisco every day.

Twenty- four hundred eggs were shipped from Kingsburg one day last week which netted $336. Not bad for one day's work.

Citizens of New Monterey are complaining that the fishermen are violating the law by taking abalones that are under the size prescribed by law. The State law prohibits anyone from taking an abalone which is under 11 inches in circumference.

James French and his son Bert, extensive Western Placer stock dealers, brought into Lincoln this week 70 head of hogs for shipment. One of the porkers, a cross between a Berkshire and Poland China, was probably the largest hog ever raised in that section, and would have been a prize winner at the coming State Fair had its owner seen fit to exhibit it. The big fellow weighed nearly 600 pounds. It cound not be driven into town with the rest of the herd, owing to its great size, and had to be hauled. None of the hogs were grain fed, but averaged 175 pounds, and were sold for 6¾ cents a pound on board cars at Lincoln.

MISCELLANEOUS.

The construction of a new gas plant has been begun at Pomona.

Fresno has already made a start for a 4th of July celebration.

Wm. Smythe of San Diego, is a candidate for Governor of California on the Democratic ticket.

The city council of Pasadena will discontinue sprinkling the city streets after the first day of June.

Stockton claims to be the third most important shipping point in the State and to have 36,000 people.

Los Gatos is to celebrate on May 1st for the completion of the finest and largest concrete bridge in the State.

Oroville and Chico have just had a joint celebration on the occasion of the opening of the electric road between the two cities.

The people of Escondido and San Diego are endeavoring to raise $150,000 for an electric road between Escondido and San Diego.

The U. S. Fish Commission has determined to stock the Bay of Monterey with silver salmon, adding annually to the invoice for the next five years

According to a dispatch from Tokio to the Times, seismographs in the Imperial University show that the San Francisco earthquake reached Japan in 11 minutes.

Oakland is moving in the matter of ornamental street lights. It is proposed to duplicate the lamps used on Broadway and Spring streets in Los Angeles.

The mountain region of Squirrel Canyon has received 54.71 inches of rain this season, and the Redlands Review says it expects between 74 and 75 inches before the close of the season.

The voters of Watsonville defeated the proposition to issue $40,000 of school bonds for needed improvements in the last city election and the Pajaronion is very indignant thereat.

Huntington Beach is discussing the propriety of adopting the wild radish blossoms as the town flower. It grows in such profusion and is never cut, that the News thinks it quite approopriate to adopt it.

The work of procuring iron for guide posts to be erected on desert roads and trails in San Diego county is to be actively engaged in at once. By these signs it is hoped to avert many deaths of prospectors.

Forty acres of choice camping grounds belonging to the Government will become exceedingly popular as a resort for tourists who do not care to spend the summer at the beaches. It is said to be beautiful and healthful and to be well supplied with water.

Many of the most substantial business men and property owners of San Francisco already are in consultation with the architects. While the work of clearing away the debris goes forward a corps of draughtsmen will be busily occupied preparing plans for the new buildings to adorn the city.

In a line with what we do in the way of protecting home industries, Germany has placed a tariff on foreign apples, which went into effect March 1. The indications are that until the San Jose scale is better controlled there will not be as great a quantity of apples as before to export from this country.

There is a movement on foot to call a good roads convention for Southern California at Los Angeles, in September of this year, to organize town good road societies and to be in condition to secure from the next legislature a very much greater appropriation for state road building. By all means this should be done.

The grounds of the University of California are still thronged with large numbers of the 16,000 homeless San Franciscans estimated to be in that city, and on that account college exercises are suspended. It is not certain when studies will be resumed and hundreds of the students have departed for their homes in various parts of the State.

LINER ADVERTISING

Advertisements in Liner Column will be charged 1¼ cents per word. No advertisement taken for less than 25 cents. Eight words to a line.

LINERS

ANCONA EGGS (FROM PERPETUAL EGG Machines), imported and domestic matings, $2. $3.50 and $5.00. L. L. Viereck, Pres. Ancona Club, Albany, Oregon.

FOR SALE CHEAP, 25 H. P. HOADLEY Portable Steam Engine. New boiler rigged for oil. Everything in first class condition. Enterprise Mfg. Co. San Jose, Cal.

WANTED—WILD TURKEYS EGGS AT $100 00 per setting. Address only The Grace Glory Grounds, Brawley, Calififornia. Wilds of wild Turkeys (acclimated).

BLUE ANDALUSIAN EGGS FOR HATCHING, from three noted strains, $2.50 and $3. Incubator lots $7.50 to $15.00 per 100. Mrs. T. R. Griffith, 3111 Walton avenue, Los Angeles.

FOR SALE, THOROUGHBRED, AND from prize winning Stock, Barred Rocks and White Leghorn Chickens, also eggs for hatching. Mrs. Ossina Low, Glendale, Cal. 'Phone 663.

FOR SALE — 30 HORSE POWER OTTO Gas Engine. Run one season, practically new. Also one 30 horse power White Middleton. Both engines guaranteed in best condition. F. H. Osler. Pomona, Cal.

FRUIT CANNING MACHINERY FOR THE Ranch or Factory, 6sizes, $10 to $225. All appliances, highest award by U. S. Trades Report. Address, W. S. Ritchie, Pacific Coast General Agent, Corona, Cal.

I HAVE 1400 FEET GALVANIZED IRON pipe, suitable for irrgiating. 1000 feet 10-inch and 400 feet 12-inch, all nearly new. Also a 90-foot cow barn fitted with wood stanchions Will be sold cheap. Call at Latin Station on Long Beach Electric line or address R. D. No. 2 Compton, Cal. H. F. Starks.

COLUMBIAN WYANDOTTE EGGS FROM winners; first ckl.; first pullet, New York; first, second, fourth, and sixth pullet; fifth cock at Boston. Eggs from $2.00 to $5.00 sitting. Send for circular. Prof. John Evans & Son, Meshanticut, R. I.

FOR SALE—WHITE MINORCAS EGGS , $1.50 sitting from one of the nicest pens of Wh. Minorcas in Southern California. Lay the most eggs and the largest-whitest eggs of any breed. Call and see them at 547 W 54 St., or address 1004 E. 9th St. Also incubator chicks for sale.

Edison Phonographs and Records at factory prices, delivered free anywhere on receipt of full retail price; largest stock of Edison records west of Rockies; send for circulars. Peter Bacigalupi, 786 Mission St. San Francisco

RANCHES WANTED *For Our Clients*
Burr-Paddon Co., 40 Montgomery St., San Francisco

Live Stock and the Dairy

BY MRS. MINNA. E SHERMAN, FRESNO, CAL.

CROPS FOR THE SILO.

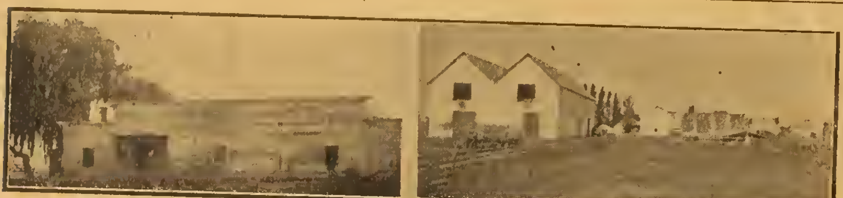
I am going to write about the crops I have been most successful with on the ranch, hoping then some will come back with their experiences. Indian corn is the great silo crop the world over. The following table shows the gain of silage over dry corn fodder. Corn silage has: Dry matter, 63 pounds; ash, 20 pounds; crude protein, 54 pounds; nitrogen free extract, 82 pounds; albuminoid, 24 pounds.

Cured cornfodder has 60 pounds of dry matter, 19 lbs. of ash ;crude protein 49 lbs.; nitrogen free extract, 65 pounds; albuminoids, 30 pounds. The crude fiber of corn silage is 47 pounds and the cured fodder is 56 pounds. The silage shows a higher digestibity of crude fiber and of the albuminoids than the fodder. The difference seems to be that the cows like the succulency of the silage best, for the difference in the actual money gain is greatly in favor of the silage. The additional ether extract in the silage is due to the development in the silage of lactic acid. This is digestable to the cows stomach in a high degree. It seems to whet her appetite the same as celery salt and condiments do ours.

The fact is that with common cows 30 pounds a day of silage and 10 of alfalfa hay will make more milk at less cost than anything that can be fed. When it comes to the superior cow, if she grows thin on this diet, add grain ration up to the limit that she pays for. Try this cheaper way of feeding the stock and see if it does not pay you handsomely. I have been feeding cows heavy grain ration the latter part of the summer and have had the silos filled and have opened them and in a week the milk will be increased and in two weeks nearly doubled, and the cows would stop eating their grain until it was only the heaviest milkers that cared for it at all, and yet the milk was doubled while the cost was reduced two-fifths.

Corn makes the sweetest silage, gives the largest tonnage and is the easiest of all silages to make. It seems impossible that anyone could fail with it if the silo is air tight below and on the sides. The older varieties of corn have given away to some new ones that promise to be superior to any thing yet grown. We found a scarcity of seed corn this year, and are growing King Phillip for the main crop, and have under trial the following varieties: Mosby Prolific, Little Red Cob, and Parrish White. These varieties were chosen on the recommendation of the Kansas Experiment Station. I find that either the Northern Louisiana or Kansas station meets the Fresno condition of soil and heat better than the other stations.

Where land lays so that it can be irrigated from side to side or end to end the corn is planted in rows eight inches apart and with three feet between the rows. These rows are made ridges and the furrow between them is used for irrigation. In preparing the land it is irrigated thoroughly then plowed, furrowed and the corn drilled in. Two cultivations are usually given before the corn tassels, and then when it tassels it is irrigated. We watch the moon for this irrigation, not that we fear its influence, but for the light it affords. The irrigation water is turned in at four o'clock in the afternoon and the water runs until midnight. The full furrows are left and the water turned back into the canal. This is repeated the next night, and as soon as the land is dry enough the corn is either plowed or cultivated to keep the land from baking. While the corn will go through the season without it, this second irrigation makes it grow to six and seven feet and often doubles the tonnage. The planting season is a long one with us—from the first week in April until the 10th of July. To mature a corn crop requires from a hundred to a hundred and twenty-five days. In April the cooler weather holds back the crop, and it takes 125 days, while the July sown corn matures in 100 days. The ordinary crops of silage from corn is about 10 to 20 tons per acre. In the San Joaquin Valley 30 tons is often grown.



The silo is filled with oats and peas. This we grow as a winter crop. The common garden peas of the Niles type of tall growth are preferred. The black Russian oat is the best for silage, but the last two years the seed has been very scarce. The peas are sown broadcast at the rate of 50 pounds to the acre, and then the ground is plowed, turning them under four inches deep. After this the land is harrowed well and in a week the oats are drilled in, or if there is no drill, it can be broadcasted and covered with a brush harrow. The first crop of alfalfa, also, goes into the silo as well as the lawn clippings and the mowing from the roadside of natural grasses and weeds. While there may be some waste to this silage the cost of cleaning up the weeds should be added, and it makes them into good manure instead of allowing them to go to seed. The last cutting of alfalfa goes into the silo as well as the first. This last crop is usually lost by frost, and to have the frosted mass rotting on the alfalfa crowns is not very good for them. The siloing of alfalfa pays in another way. It seems in a few years to take all the foxtail seeds, and this pest grows less and less.

The Silo stands ever ready to have any green stuff put in it. It does not matter if it is half full of some other stuff. All it requires is to remove the surface mould, and put in the new stuff on top. I have had a silo not emptied for four years and when the bottom was finally reached the silage was good. Alfalfa silage is a little harder to make than corn, and I think this is because it is not as mature, so it is put in to heat up slowly and then the second lot added. The advantage of growing an oat and pea crop in the winter and putting it with the first alfalfa crop into the silo is that it is off the land in time to sow corn and then the corn comes up first in the fall for feeding when the cows are fresh. This is fed against a diet of alfalfa hay and rolled barley, with bran for a protein balance, while the

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alfalfa and oats and peas are in themselves protein, and when we reach that in the silage the cows receive corn meal and oil meal to balance it up. It is a distinct change by making first the protein in the concentrated foods then in the bulky form. With the alfalfa silage the straw from the wheat affords the cows an agreeable roughage. This manurial value of cow feeding is great and that alone we forget in California and buy quantities of commercial fertilizer, making one profit where two are in reach of every fruit grower if he would feed concentrated food to the cows and put money into feed rather than into commercial fertilizers.

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Have moved their herd of Jerseys from San Bernardino, Cal., to the famous Imperial Valley, and hereafter their post office address will be Heber, San Diego Co., Cal., from which they will conduct all their business. Abundant green feed every day in the year will be of great advantage in the best development of our young stock.

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Service bull "SARGENT FOX," 64833. Bred on the Island of Jersey. Sire, the great Flying Fox, that sold at auction for $7,500. Dam, Miss Sargent, reserve winner over Jersey; winner of seven first prizes and five championship cups. "One of the grandest cows the island has ever produced."

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For Sale, yearling bull Ruth's Gordon King, No. 72360 A. J. C. C. He is of richest breeding on both sire and dam's sides. Also three richly bred heifer calves by Marigold's Exile King, from cows that are good yearly producers. For particulars write

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ANIMAL FLY KILLER.

Editor Cultivator: Last summer my cows were terribly bothered from flies, so much so that their flow of milk greatly decreased. Please publish in your paper a formula for a fly-killing mixture that can be sprayed on stock to relieve them from the annoyance of flies.—Mrs. G., Tulare.

Try the following mixture. It will relieve horses as well as cows:

Resin, 1½ pounds; laundry soap, 2 cakes; fish oil, half pint; enough water to make three gallons. Dissolve the resin in a solution of soap and water by heating, add the fish oil and the rest of the water. Apply with a brush. If to be used as a spray, add a half pint of kerosene. This mixture will cost from 7 to 8 cents per gallon, and may be used either on calves or cows. One-half pint of this mixture is considered enough for one application for a cow; a calf, of course, would require considerably less. It will be more economical to apply this only to the parts of the animal not reached by the tail. At first it will be necessary to give two or three applications per week, until the outer ends of the hair becomes coated with resin. After that retouch those parts where the resin is rubbed off.

HEAVES.

I have a horse ten years old that is affected with heaves. Can you give treatment that will cure him?—E. B. L., El Centro.

That depends on the length of time that he has been troubled with the disease and the stage of the disease. Carron oil given three times a day in two to four ounce doses will give relief. Feed should be free from dust with but little hay.

RING WORM.

Editor Cultivator: I have a young horse that has gone lame in the hock. It has a swelling about an inch wide almost around the foot. The horse has never been strained, nor overworked. What can I do.—G. E. L., Oakland.

Your horse probably is affected by ring worm. In a recent number of The Cultivator, three weeks ago, this subject was spoken of and a remedy given. Look up that paper and use that remedy.

CARE OF THE COLT.

Editor Cultivator:—I have purchased a colt that was taken from its mother the first day or two. It is seven weeks old. How shall I feed it?—Mrs. E. T., Hynes.

Your question is answered on the first reading page of the Cultivator of April 13. Feed much as you would any young animal—carefully and regularly.

Cream Separators, all sizes, all prices. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

ANSWERED ELSEWHERE.

Editor Cultivator:—Will you please publish the recipe that appeared in your columns some months ago for keeping flies and mosquitoes away from horses and cattle? —J. W. H., Brawley.

Read your answer in receipt given this week for animal fly killer.

HEATY MARES.

Editor Cultivator:—I have a mare which gets in heat every sixty days or so. I do not wish to breed her. What shall I do? —R. P. S., San Luis Obispo.

There is nothing to do except to spay her.

SORE NECKS.

Editor Cultivator:—We are troubled with our horses having collar sores. Can you give us a remedy?—J. S. S., El Monte.

Adjust your collars and harness to the shoulders. At night wash with warm water and castile soap and rub dry with soft cloth. If sores have festered apply twice a day a little of a mixture of two ounces of tincture of iodine and four ounces of extract of witch hazel.

DEVELOPING HEIFERS.

Heifer calves should be handled with great care and frequently handled. They should be halter broken and in this way kept gentle. The frequent manipulation of the udder before she freshens will not only cultivate a relation that will cause her to have confidence in her milker, but stimulate development. We consider this very important, then when she freshens she will take kindly to the work she is intended to do and will not be subject to the ordinary ordeal of being broken. The heifer in order to give the best results should drop her first calf when about two years old. This will have a tendency to make her a more persistent milker than when delayed another year. In having a heifer freshen at three years old, we admit that you will have a larger cow, but one that will not be as persistent or copious a milker. You likewise would lose one calf and one year's milk. In the case of the three-year-old, the heifer acquires a tendency to apply her surplus fat instead of in the secretion of milk, a tendency which will cling to her through life, and which would have been avoided by earlier breeding. It must, however, be borne in mind that this only applies to heifers that have been well cared for and have made a vigorous growth.—Western Farmer and Dairyman.

The San Fernando Valley Horse Breeders' Association has shown a stroke of enterprise and secured the imported Clydesdale stallion, Barometer, which will be at service at Toluca and Burbank during this season. Barometer is a magnificent specimen and a prize winner at Glasgow, also at Ohio State Fair and at Kansas City Stock Show. Such an animal should be used to the limit, and will build up California stock.

Look after the brood mares. Keep them healthy and well fed, so that they will be in good condition at foaling time.

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Profit in the Poultry Yard

BY MRS. A. BASLEY, HOLLYWOOD, CAL.

INSECT PESTS.

I had not intended writing on insect pests so early in the season, but I have had letters from some of my good sisters in the poultry yard, one especially in San Bernardino county, writes that ticks are very prevalent there in the summer, and are especially troublesome in old wooden buildings. They squeeze in between the boards that are tightly nailed together, she tells me, and some are as thin as a piece of paper, that is before they have partaken of a chicken supper. They bury their heads under the skin of the chicken and remain there, sucking the life blood until they are as large as a navy bean and black with the blood. Hundreds of chickens die from these ticks and it is exceedingly difficult to get rid of them. Two years ago I received letter after letter from Beaumont and Banning all of whom sent me boxes through the mail containing live ticks, enough to stock all Hollywood poultry houses. Some of these ticks I sent on to Professor Cook of Pomona and some to Professor Ward at Berkeley. The latter was at the St. Louis World's Fair, therefore could not reply. Meanwhile, I had written to those in trouble (they were losing half-grown chicks by the hundred) and had advised their spraying their houses with kerosene emulsion and carbolic acid, and, whilst the houses were still wet, fumigating with sulphur.

To do this close every door and window, stop up all cracks that would admit air; burn one pound of sulphur for every one hundred spare feet of floor space in the house. Thus a house 10x10 will require one pound of sulphur; one 10x20 will require two pounds; one 30x10, three pounds and so on.

The sulphur must be burned in iron vessels, which must be set on gravel or sand, so there may be no danger from fire. Into each vessel put a handful of carpenter's shavings saturated with kerosene, and upon these sprinkle the sulphur. Apply a match to the shavings, and hastily leave the house, closing the door. The house should remain closed for five hours, when every door and window should be thrown open. The fumigating may be followed by thoroughly whitewashing the walls inside and outside.

This advice was followed and I received a letter saying, sulphuring, whitewashing and kerosene emulsion spraying does not "feaze" the ticks. I then wrote, try painting or spraying with Lee's Lice Killer, and if that does not succeed try corrosive sublimate.

The reply was that corrosive sublimate "feazed" them, but it was expensive, and it is also a dangerous poison.

Professor Cook wrote that he could not add more to my advice that corrosive sublimate was the best thing to use.

* * *

Mrs. Sherman tells me that at one of the Farmers' and Grangers' conventions about fifty people including the Berkeley professors, discussed this subject, and it was then decided that the best way to fight the ticks was by painting the henneries inside and out with crude petroleum, putting it on freely with a whitewash brush, and then fix a little shelf over the entrance door, on this put a can with a small hole in it and keep the can full of some bland oil, cottonseed preferably. Let the oil drip on to a small curtain of burlap cut into a fringe and so hung that each time a hen or chicken passed through the door the oily curtain would wipe its head off. I hope all our readers will remember this and prepare in this way to fight this enemy. I do not see why the crude petroleum would not be as efficacious in killing chicken ticks as in the destruction of the much-dreaded Texas fever tick, and we know that all cattle coming into this State from Texas are made to pass through a crude oil bath to destroy the ticks, so I strongly advise those who live in a locality where there are ticks to paint their henneries with crude petroleum. I used it for my houses, mixing fifty cents worth of Venetian red with a gallon of common coal oil and adding that to about ten gallons of the crude oil. This made a rich, dark red or chocolate colored paint, which looked well and preserved the wood and I never had any trouble with ticks. This paint lasted for about six years without renewing and looked well when I sold my ranch, and I believe has not been repainted since.

* * *

Next to the ticks come "mites." The red mite is the most common and active of all parasites that attack fowls and even wild birds in this climate. It is very tiny, almost like a grain of sand, and is white or grey in color except when filled with blood, when it is red or almost black. This parasite hides by day in the corners and crevices of buildings, nest, perches, floors, and so forth, where it may be found in clusters.

A poultryman that I know visited one who found the poultry business an utter failure, "Look at that" said the successful man, pointing to a lump of something red on the hennery wall. "Yes," said the failure, "that red stuff oozes out of the Oregon pine." My successful friend took a card out of his pocket and with it scraped off some of the "ooze" and showed the other man that it was alive It was mites, red with the blood of the poor hens. No wonder that they were not "doing well."

At night the individuals composing the clusters scatter themselves over the birds and by pricking the skin, fill themselves with blood. They are injurious not only on account of the blood they draw from the fowls, but because of the itching pain and loss of rest, which frequently will even kill young fowls and sitting hens. When mites are discovered vigorous means should be adopted to get rid of them.

The Iowa State Experiment Station in an interesting bulletin gives a description of the best way of exterminating these litle pests. It was found that the kerosene emulsion, sprayed thoroughly three times on the same day was thoroughly effective; it is made as follows:

KEROSENE EMULSION.

In one gallon of boiling water dissolve one bar of laundry soap, or one pound of soap powder. When the soap is thoroughly dissolved, take it from the fire and add one gallon of kerosene. Churn or stir vigorously until cold. Take one quart of this and to it add ten quarts of water. The ex-

Raise Every Chick

If every Chick hatched last season had reached maturity in 60 to 90 days—hardy, strong and vigorous—how much extra money would you NOW have in the bank?

You could have SAVED these Chicks—every one—if you had used

Purina Poultry Feeds

—for one kind—Purina Chick Feed, is made on purpose to save the lives of little Chicks, and make them grow like weeds. And it DOES IT. Brings up the highest percentage of every hatch EVERY TIME.

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White Leghorns, 10c each. Large orders a specialty. Eggs from fine, large thoroughbred stock. Terms cash. Order now.
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St. Louis, Mo., Dec. 8th, 1604.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A FILCHER, Commissioner.

And Now Comes New Reward for Merit:

Read the following telegram received from the Lewis & Clark Exposition at Portland:

"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

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Eggs for hatching in Incubator lots. A few Wyandottes of Dustin strain to sell to make room. Prices on application. MRS. C. A. McDONALD, Beaumont.

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A few fine cockerels $2.00 to $4.00 each. Eggs, $2.00 for 15. Very choice Eastern stock.

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Prize winners at L. A. Show, '06. Eggs from good laying strains. Eggs, special matings, per 15, $2.00. Incubator lots, $6.00 per 100.

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Eggs from World's Fair Buff Leghorns $3 per 13, $7.50 per 100, $5 per 50. Commissioners' Cup for best display California bred poultry at Lewis and Clark Exposition. ***Barred Rock*** eggs, $1.50 per 13. ***LINDGREN BROS., Kingsburg, Cal.***

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Eggs for hatching from the famous J. W. Miller strain, Freeport, Ill. $1.25 per 15

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Good layers. Trap nests used. Eggs: Wyandottes $1.50 to 2.50 per 15. Leghorns $1.50 per 15.

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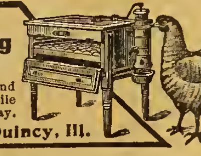

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Indian Runner Ducks' Eggs—$1.00 per 13, $3.00 per 50, $5.00 per 100. White Minorca and White Wyandotte eggs:—$1.50 per 15, $4.00 per 50, $8.00 per 100. Eggs carefully packed and shipped any where.

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WHITE MINORCA EGGS

Best of Stock. Great Layers.
$1.50 setting, $8 100, $65 1000.

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Little Chicks Just from the incubator of the following varieties and prices:

White and Silver-Laced Wyandottes
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100 Chick Brooders
150 Chick Brooders
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Fourth Carload "Old Trustys"

Special Sale

The Salt Lake Railroad held our car of Old Trusty at the scene of the washouts in Utah for 22 days. The delay has lost us many sales. In order to move this carload quickly while we are settling with the railroad company we will make you very low prices on the Old Trustys, delivered to you anywhere. Investigate, that's all we ask. Never again will you get this price; buy now and save money. Get the catalogue, 124 pages—it's free. Send yonr name, that's all. Free trial to all in your own home with the Old Trusty.

McClanahan Company, 711 So. Main St., Los Angeles, Cal.

periment station advises spraying three time in one day, but I think three times at intervals of three days would be better. I also add one pint of crude carbolic acid to the gallon of kerosene. By using this spray once a month the houses can be kept perfectly free from vermin, and thoroughly disinfected from disease bacteria.

* * *

EDITOR'S QUESTION BOX.

Dead Hen. (Always a Subscriber. R. L., The Palms.) I write to ask you a few questions about a Barred Rock hen I had. As I went in the yard today I noticed she had several bunches on her head under the eyes. I picked her up and upon a close examination I found several hard bunches on her, along on her breast and legs. on both sides of her legs. just a large, hard bunch. I cut her open to see if anything was wrong there, and she looked perfectly healthy, the gizzard was full, had grit and shell also. I also found a bunch of eggs; they were small but quite a bunch of them. I cut one of the hard bunches open and it was yellow in color; looked like it might be fat, but was too hard for that. The hen was in a fair condition but not too fat. I would like very much to know what was the matter with her.

Answer. I have seen a case exactly like what you describe in the flock of a friend of mine about seven years ago. At the time I pronounced it "cancer," but on talking it over with a medical friend he said it was tuberculosis of the skin. My friend never had another case of it and never knew how it originated. Hers was a particularly healthy flock of Plymouth Rocks. I do not think there could be any cure but the hatchet and very deep burial. Your feed is all right. but be careful not to give too much corn to Plymouth Rocks; feed more wheat than corn. Plymouth Rocks easily put on fat instead of laying eggs if fed too wide a ration, that would be with you too great a proportion of corn or cornmeal. Leghorns do well on a wide ration; Plymouth Rocks on a somewhat narrow ration.

* * *

Gummed up Eyes.—(Mrs. E. B. M.) I am a subscriber to the Cultivator and read the poultry items with interest, as I am raising some. I presume you are the one to write to for information.

My early chicks did fine, but my late ones seem to have an affection of the eye. In the morning they can't open them. I rub them with vaseline, and then they seem all right; otherwise lively; the next morning it is the same. Some get over it, but a good many die. Can you tell me what to do for them? Also my later chicks, after about two weeks old, look droopy and blear-eyed. Is that from lice? Now your answer will be greatly appreciated.

Your chicks have what is termed of most cases of this kind is in roupy of nearly cases of this kind is in roupy breeding stock. A slight chill or cold is sufficient to start an epidemic of this in a flock of chicks. if they already possess the inherited tendency from their parents. Sometimes the trouble comes from irritating circumstances, such as airslacked lime, dust, insect powders or kerosene getting into the eyes. The best way to remedy such cases is to remove the cause. Lice and mites will also cause it. Your treatment of greasing the lids gently with a little vaseline is the best you can use. If they are with a hen she undoubtedly is giving them lice, or if they are in a brooder the chances are there are mites in it. Read the article in this Cultivator on mites and for lice take the hen alone, dust her thoroughly with lice powder, and then put her in a box, the bottom of which is painted with fresh "Lee's Lice Killer," put a bit of burlap over the top to keep her in and leave her in the box for three hours. Put a little straw into the bottom so her feathers will not be soiled with the lice killer. Then grease the tops of the chicks heads. I wish that my correspondent would always tell me the breed of the chickens, how raised, whether by hen or incubator and brooder, how fed, housed, etc. It would make it easier for me to correctly diagnose the case by knowing all these little particulars, which seem trival in themselves, but are most important.

* * *

Infertility.—J G. M., Auburndale.) Please tell us through the Cultivator at what age should a Barred Plymouth Rock chicken weigh 1½ pounds? What does it cost to raise chickens up to two months old (being well kept)? Which matures faster, Rocks or Orpington? Mr. White bought a Tom of a thoroughbred turkey raiser for breeding purposes, the seller recommended it to be a very vigorous Tom and all right in every way. It failed to fertilize any eggs. Who should stand the loss (it being a $15 Tom), Mr. White or the seller? When eggs are sold at extra prices for setting, who should stand the loss of infertile eggs.

Answer.—A Barred Rock chick should (if parents were up to standard size) weigh 1½ pounds at from eight to ten weeks old, according to how it is fed. To raise a broiler to that weight costs about 18 to 20 cents, with food at the present prices here, buying everything for feeding.

About the infertile Tom turkey, the seller is honor bound to replace it with another, but there is no law on the subject.

There is no law either about infertile eggs. I always replaced infertile eggs if the fertility was less than 75 per cent, when the eggs were returned to me, and most sellers do that. Some offer a second sitting at half price, others will do nothing, and soon get to be known and lose many customers.

* * *

Dark Comb.—(J. D. E., Downey.) My laying hens are laying well, but I notice during the last few days that combs of several in the flock are turning black and drop down. Will you kindly advise what to do for them? I feed in the morning two-thirds bran, one-third Coulson Egg Food; noon and night whole wheat. About 8 a. m. and 4 p. m. I turn them out on groing alfalfa. Shells always plenty.

Answer.—The comb of a fowl tells quite a little story of what is going on in the organs of the whole body. The dark comb indicates liver trouble, which usually comes from lack of exercise, or feeding a wrongly balanced ration. I do not know what breed you keep and can only suggest that you make your hens scratch more by feeding all the grain in deep (6 or 10 inches deep) litter or straw.

You might give those that have dark comb a dose of castor oil—a teaspoonful—or a dose of Epsom salts.

Prussian Lice Killer

Easy, quick and certain riddance of vermin on poultry and animals.

"I have used the Prussian Lice Killer on my chickens and it is certainly the best I ever used. It is easily applied and it does its work in great shape. I will say to my fellow poultry keepers that they will save time and trouble by using Prussian Lice Killer.
Harry Rutledge, Dyer, Ind.

½ Gallon 50c. 1 Gallon $1.00.

Prussian Lice Powder

The dust method. Sure death to lice, no injury to birds or animals.

"I used a 25c package of the Prussian Lice Powder on 16 head of lousy cattle, and the day after could not find a louse. I consider it the best thing I ever saw." H. V. Spafford, Kelso, N.D.

In 25c and 50c Packages.

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Guaranteed to produce healthy fowls, more rapid growth, make better layers and to ward off and cure Roup, Gapes, Cholera, etc.

"We have used Prussian Poultry Food for more than two years with great success. We find that it is the proper food for young chicks and just the thing to keep up laying hens."
Arnold Jungman, Poultry Yds, Gladstone, Minn.

In 25c and 50c Pkgs. 25 lb. Pail, $3.50.

"Poultry Profits," 36 pages, to poultrymen free, if you write us what stock you own.

Prussian Remedy Co., St. Paul, Minn.

AGENTS: Vaughan Seed Store, Chicago, Ill. J. W. Wilder & Co., Cincinnati, O. Lee-Pioneer Seed Co., Denver, Colo. Portland Seed Co., Portland, Ore.

BRONZE TURKEYS

Hart's strain. Winners of five firsts at Los Angeles Show, '06, and always winners wherever exhibited. Write for prices.
Ed. Hart. Clements, Cal.

SHADE'S **Rhode Island . . . Red Farm**

Automatic Chicken Feeders.
Shade's Egg Food sold to consumers only.
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SINGLE COMB WHITE LEGHORNS

Thorough-bred Stock. Eggs, $1.50 per 15

INDIAN RUNNER DUCKS

Eggs, 1.50 per 12.
Send for illustrated catalogue

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S. C. White Leghorns—Heavy layers. Eggs, $1.50 per 15, $5.00 per 100.

Indian Runner Ducks—Males for sale. Eggs, $1.00 per 13, $3.00 per 50, $5.00 per 100.

Mrs. J. L. Updyke - Fullerton, Cal.

Successor to Jacob Kreger

Single Comb White Leghorns

Winners of the Dodge Sweeney Cup

Best display White Leghorn in Sonoma County at San Francisco Exposition, 1905, 1st pen, $5.00 per setting; 2nd pen, $3.00 per setting. Eggs from free Range 5 cents above Chronicle quotations. Stock for sale.

A. H. M. Davies, Western Ave, Petaluma, Cal

High Grade **S. C. Rhode Island Reds White Plymouth Rocks and Buff Leghorns**

All new matings this season. Some of the breeding birds personally selected by the owner in the east last fall. Strong hardy stock, bred to lay and to win. Our Reds won at San Francisco, San Diego and Los Angeles shows. Best eggs $2 00 for 15, $5.00 for 50. From good utility matings $1.00 for 15, $3.00 for 50.

Lake Avenue Poultry Yards

757 N. Lake Avenue - Pasadena, Cal.

When writing advertisers mention Cultivator.

LUCK WITH EARLY CHICKENS.

It is the early bird that catches the worm. and it is the early chick that will commence to lay the earliest in the fall and produce the most eggs during the winter. Therefore it is highly important to have the early chick. How to get her is what we are to consider. It is like a puzzle, very simple after you know how.

Some people think that in raising chickens it is all luck or chance, and frequently things do happen to give color to the idea in this as well as in other lines of business. For instance, one man I know of put sixty eggs in his incubator and got no chickens, and from a hen he set, only three. Another man who is a breeder of choice fowls got thirteen chickens only from two hundred eggs this spring, while another person not a breeder and without any special thought or care, got eleven and twelve chickens from every hen set.

It is astonishing sometimes to think how fortunate some people are in this world, who, if not actually born with silver spoons in their mouths, all they have to do is to open their mouths and the gold nuggets or dollars drop right in. But such people, if there are any, are the exception and not the rule. When you come to sift a person's good fortune, great success or great wealth you will find it in most cases, to have been acquired by the use of brains in hard study and hard work.—W. P. A. in Massachusetts Ploughman.

Chickens and Eggs

Having handled Poultry in this market for the past thirty years, we can give you the best results and prompt returns.

D. E. Allison & Co., Inc.
119-123 Washington St., San Francisco

Single Comb Brown Leghorns
Exclusively

Stock for sale and eggs for hatching. Eggs from first pen $2.00 per 15 eggs, second pen $1.50 per 15. Incubator lots for $6.00 per 100 eggs. They have always won first prize whenever shown. Large birds and heavy layers.

W. E. Mercer - - Ventura, Cal.

A POULTRY COLONY
NEAR LOS ANGELES HAS BEEN FORMED

for mutual benefits. Situation unexcelled; plenty of good water, splendid soil and close to town. Only a few acres left. Apply at once to

Anna L. Pinkerton

Realty Trust Company, 129 So. Broadway,
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30 DAYS TRIAL
Buy From Our Factory—Save One-Third.
PRACTICAL INCUBATORS positively the best. Hatches more and stronger chicks. 10 YEARS' GUARANTEE
Cal. free. PRACTICAL INC. CO., 720 S. 11th St. San Jose, Cal.

FOR SIX YEARS
Albers' Black Minorcas

Have led in the shows every year, and they lead all breeds in egg production the time. Eggs in large or small ots. Stock for sale. Circular free.

GEO. R. ALBERS
4849 MARMION WAY LOS ANGELES, CAL.

CARE OF YOUNG CHICKS.

In order to have a good, early maturing pullet it is necessary that she get a good start. The first few weeks' care is responsible to a great extent for her success or failure eight months later. Feed, regularity of feeding, cleanliness and plenty of grit and water are all important matters. Chicks should be carefully protected from storms and sudden changes of weather, since these, together with the low vitality of the parent, are responsible for more deaths than is improper food. Poultrymen differ considerably as to when the chick shall have its first food. Good results have been secured when chicks have been permitted to pick a little sand or fine grit from a clean board when about 36 hours old, and, when about 48 hours old, to eat bread crumbs moistened in milk and squeezed dry. After that almost any of the prepared chick foods may be fed about three times a day till the chicks are two or three weeks old, when they will do well with wheat screenings and need not be fed oftener than three times a day. It is advisable to let the chicks have access to green feed at all times. Fine alfalfa hay, cut with an ordinary straw cutter, is excellent, and also makes a good litter to scatter the feed in. It is best, however, to give the last food at night on a clean board, letting the chicks eat all they will and then removing the board. At other times care should be taken that they be kept hungry, or at least sufficiently so to be eager to eat when fresh food is offered them.

SELECTING TURKEY STOCK.

A few plain rules which may be observed to advantage are as follows:

First—Always use as breeders turkey hens over one year old. Be sure they are strong and healthy and vigorous, and of good medium size. In no instance select the smaller ones. Do not strive to have them unnaturally large.

Second—The male may be a yearling or older. Do not imagine that the large overgrown males are the best. Strength, health and vigor, with well proportioned medium size, are the main points of excellence.

Third—Avoid close breeding. New blood is of vital importance to turkeys. Better send a thousand miles for a new male than to risk the chances of inbreeding. Secure one and be assured of his health and vigor prior to the breeding season.—T. F. McGrew.

HOW TO DRESS POULTRY.

Poultry should not be fed for twenty-four hours before killing. A full crop injures the appearance of the dressed bird and is liable to sour and low prices are the result. Poultry should always be killed by bleeding in the mouth, or by opening the veins in the neck. then hang by the feet until they are properly bled. The crop and the intestines should not be removed and the feet and head should be kept on.

Either manner of dressing. by scalding or by dry picking, sell best to shippers, and those scalded best to the home trade. For scalding chickens you should have the water as near boiling point without boiling. Hold by the head and legs, which should be picked dry before scalding. then immerse and lift up and down three times. If the head is immersed it turns the color of the comb and gives the eyes a very shrunken appearance, which leads the buyer to think the

Standard Bred S. C. White Leghorns

EXTRA LARGE BIRDS AND HEAVY LAYERS. Eggs, $2 per 15; $8 per 100; $60 per 1000 from January until July only.

CAPTAIN MITCHELL SANTA BARBARA, CAL.
Author of "A Practical Poultry Plant for Southern California," $1.25 cloth binding, on sale by Calif. Cultivator

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LEE'S LICE KILLER EGG MAKER | LARGEST POULTRY SUPPLY HOUSE IN THE U. S.
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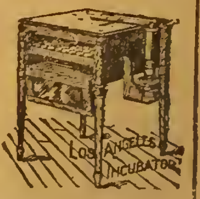

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Largest Breeder of WHITE WYANDOTTES on the Pacific Coast
¼ Wild Mammouth Bronze Turkeys.
1906 Winnings 32 Prizes Write for Circular Clear Eggs Replaced
MRS. C. D. HUBBARD,
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White Wyandotte Stock for sale, $1.50 and up.

Emery's Pure Meat Meal
Don't believe all we say, but just enough to buy our Poultry Foods
Ask your nearest dealer for them and take no imitations
Emery's "B. B. & B."
THE PACIFIC GUANO & FERTILIZER CO. Successors to N. Ohlandt & Co San Francisco, Cal.

WHITE WYANDOTTES

200-250 Egg Fowls **16 Prizes San Francisco**

Since the ***Earthquake*** our "Cream of the Coast" White Wyandottes are laying better than ever.

Eggs, $2 00, $3.00 and $5.00 per 15. Incubator lots, any quantities. 25% discount for 30 days. 100% fertility guaranteed. Express prepaid. Beautiful circular free.

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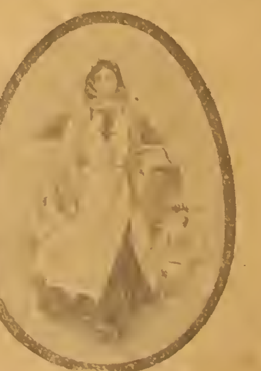
West Coast Chick Feed

A perfectly balanced ration for the growing chicks. All pure food, no filler, no waste, hence cheapest. Keeps them growing and healthy. Made by
WEST COAST STOCK FOOD CO.
818 San Fernando St. (through to Alameda) Los Angeles, Cal.

SAM'L R. KELLAM, President of the L. A. Co. Poultry Association, says: "West Coast Chick Feed is the best feed for young chicks I have ever used."

MRS. A. BASLEY, the celebrated poultry authority says: "I want some more of your West Coast Chick Feed for it is excellent. I is purer, cleaner and appears better balanced than other feed I have been using, and to tell you the truth I have been experimenting feeeding both together and they always eat yours in preference."

S. M BUTLER, Lamanda Park, the well known poultry judge and successful breeder, says: "I want to say that too much praise can't be given West Coast Chick Feed for growing Chicks."



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HYNES, CALIFORNIA
Breeders of S. C. White Leghorns Exclusively

Fine Feathers alone do not make the profitable hen. Our fowls have the reputation of being ***extra large, handsome*** and ***extra heavy layers.*** Last season, our eggs averaged over 95 per cent. fertile. ***Remember***—In getting eggs from us, you do not get them from the general runs. We have but one grade of eggs to sell for hatching and those are from our breeding pen composed of only the choicest fowls, selected from hundreds that are ***bred to lay.*** Hens that approach the ***200 egg record.***

Price of Eggs—$1.50 per 15, $5 per 100. ***Send for Illustrated Catalogue. Address,***

LEO. W. MARDEN, Manager

fowl has been sick. The feathers and pin feathers should then be removed immediately, very carefully and without breaking the skin. They are then "plumped" by dipping ten seconds into hot water and then put immediately into cold water, where they should remain until the animal heat is entirely out, after which they should be hung in a cool place.

To properly dry pick poultry the work should be done before the bodies get cold and while still bleeding. Dry picking is much more easily done while the bodies are warm. The work should be done very carefully, that the skin may not be torn or broken. —H. L. Blanchard, in the Ranch.

FOOD FLAVOR IN EGGS.

S. D. Taft, of Yeomans, Ia., writes The Farmers' Sentinel that he differs with some writers' opinion that what a hen eats in no way affects the flavor of her eggs. "Years ago," he writes, "we had a flock of chickens, mostly Spanish. We also had an abundance of grasshoppers that summer, on which they grew sleek and fat. On this diet they began to lay far better than before. We never saw hens do better. We thought as the hoppers ate our corn our hens might eat the hoppers, so what hoppers they could not catch we caught for them. One day we had company, and to treat them to something nice, served cooked chicken. To our surprise, we could not eat the chicken. It tasted as if we had fried it in rancid grease instead of butter. Not to be outdone in the matter of the dinner, we fried eggs, but as before, we could not eat them, owing to that rank taste."

INCUBATOR RULES.

Have a regular hour for incubator work.

Do not tinker too much with the regulator.

Get the adjustment right and keep it so.

Be sure vour hands are clean when handling eggs.

Do not disturb the eggs after the evening of the eighteenth day.

There is no one thing that will start a hen to laying and keep her at it like a fresh made nest now and then. Place the nests in a part of the house where they will be as dark and quiet as possible. Business hens do not like to have their nests molested.

It is a good idea to provide shade for poultry, in fact, essential in California. If you have not already planted trees for this purpose make preparations to set out as many as possible now. It is not too late. Secure those that are best suited to your locality and keep in mind that it is well to plant the trees so that they will be ornamental as well as useful.

Eggs.—It is well known by most chicken fanciers that unfertilized eggs keep better than fertilized. How many can tell, if you take the rooster away from the flock for how many days will the eggs produced prove fertile? Eleven days according to the latest

---

If a chick is allowed to stop growing it will take a long time to get it started again.

"Don't put all your eggs in one basket"—put most of them in an incubator at this time of year.

Mate the hens with a full-blooded cock of merit. A trap-nested bird is the most valuable. Be sure he has no physical deformities.

TO GET FANCY PRICES.

In a Cornell bulletin on the subject of marketing eggs among the conditions named in order to get fancy prices are eggs of highest quality, which can only be obtained with skill and care from pure bred fowls, spotless clean eggs, and therefore as soon as gathered they should be taken to a cool place and covered with a clean cloth; wiped, never washed, when dusty, because washing removes the natural secretion which covers the shell and: ,

"In order to secure a fancy egg market the supply of eggs must be continuosus. The poultryman who can not get a reasonable number of eggs every month in the year can not hope to secure the highest paying trade. Consumers, large hotels and dealers are lookers for the man who can furnish them with a definite, reasonable number of eggs during October, November and December. To such a one they will pay the highest prices, and they will take his eggs all the year round, in order to have the privilege of getting them when eggs cannot be obtained elsewhere at any price. These rich customers will not consider for a moment dealing with a producer who cannot supply eggs during the three months mentioned. Therefore, one of the first requisites in working up a high class trade is to be able to deliver the products regularly and continuously. Unless this can be done one cannot hope to secure much, if anything, above the regular market price throughout the year."

OVER-FEEDING

One of the most important subjects that confronts the poultryman today, especially the beginner, is the caring writes Mrs. Wilcox to the Northestern Agriculturist. Chicks normally hatched and given almost any kind of care will live and seem to thrive for the first week, then the trouble begins. The critical period in the chick's life is the first two weeks. Starting the chicks right is half the battle. When they have arrived at 3 or 4 weeks' old they have nearly passed the dangers of chickendom.

One great danger is over feeding. The young chicks require but little food for the first few days of their life. Their digestive organs are not strong and by over feeding they are over taxed and bowel trouble results. Just before leaving the shell the chick draws into the body the whole of the unabsorbed yolk of the egg. This is its food before and after leaving the shell. It must be exactly right, as nature never errs. It is the food nature provided to sustain life until the chick is strong enough to take other food. Chicks should not be fed until 48 hours old. If fed too soon or too much the yolk of the egg which it took into the body before leaving the shell will not be drawn upon; it will remain unabsorbed and in time decompose, causing death. The greater number of chicks which die of bowel trouble do so at about a week or ten days of age. If you will open one of them nine cases out of ten you will find decomposed yolk in the yolk sack. Improperly feeding chicks especially for the first two weeks unmakes more would be poultrymen than any other one thing in the whole business.

Huskins' White Wyandottes

Prize winners for two years, 1905 and 1906, at L. A. Eggs for hatching from standard bred stock, $1.50 per dozen, or if you mention Cultivator, will send thirteen.

A. W. Huskins, 713 Waterloo St., ***Los Angeles***

White Plymouth Rock Poultry Ranch

Eggs for hatching from First-Class Stock $6.00 per 100, $1.50 per setting 15 eggs.

J.T. DAVIS, Prop. POMONA, CAL.

Blue Andalusian Eggs

$1.50 and $2.00 for 15, $7.00 per 100. Free range. I raised and sold cockerel winning first prize at late L. A. poultry show. Stock. ***Mrs. J. S. Duff, 3145 S. Hoover St., Los Angeles, Cal.***

White Wyandotte Eggs

For hatching. Pure Dustin & Hallack strain. From 1st Pen, $3.50 per setting, 2nd pen, $2.50.

Mrs. S. H. Church, 505½ S. Main St.. Los Angeles

S.C. White Leghorns Indian Runner Ducks

Eggs, $1 per setting, or $5 per 100. Leghorns of McFarlane strain Fertility high, 80% guaranteed. ***J. E. Beadle, 901 No. St. Louis St., Los Angeles.***

White Minorca and Buff Orpinton Eggs

$1 per 13. $1.75 per 26.

Indian Runner Duck Eggs, 65c per 12, $4 per 100. All healthy and standard bred stock.

H. C. Boyer - ***Toluca, Cal.***

Banning Poultry Yards

Wanted—To Exchange, 20 Barred Rock hens and 2 Barred Rock cockerels for same No. S. C. Wh. Leghorn hens and cockerels. Correspondence solicited. **Morris Bros., Banning, Cal.**

S. C. WHITE LEGHORNS

I can furnish you with first-class eggs that will hatch strong, vigorous chicks, and give you satisfaction. $2.00 per 15, or $7.00 per hundred. Stock for sale. All eggs and stock purchased of me shall give perfect satisfaction. I make this a point.

Monte Vista Poultry Farm

L. D. Pettit, Mgr. ***Corning, Cal.***

SONOMA-AMERICAN INCUBATOR

Send for large circular fully describing these machines.

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from a heavy-laying strain of

SINGLE COMB WHITE LEGHORNS

I guarantee 100% fertile. Write for prices.

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$8.00 COCHINS $8.00

A Trio—Buff, Black or White

Send for circular, giving undefeated show records. These are the best winter layers, finest table fowls, and by far the most healthy and hardy. Eggs, $2.00 per setting of 15. Prize winners, Eggs, $3.

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Standard and Line-Bred Barred Plymouth Rocks Exclusively

Ocean, Blue, Thompson Ringlet and Arrowhead strains. Eggs for hatching, chicks for sale. Winners at the 1906 Los Angeles Show.

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Buff Orpington and Barred Rock Eggs

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Tel. East 1767. Station A, Los Angeles, Cal.

White Wyandottes.

High scoring stay white birds. 1st Cock L. A. 1906 show and other winners. Eggs $1.50 to $3. per 13. $10.00 per 100. Mount Holly Poultry Yards, Hollywood, Cal. E. W. Preston, Prop., Sunset, Hollywood, 901.

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Two pens, both headed by prize-winning cockerels; 1st at Los Angeles and 1st at San Diego. Four prize-winning females in pens. Eggs, $1.50 per 15.

WHITE PLYMOUTH ROCKS

Special mating, pen headed by Fairview Prince a son of the best layer in our yards, $1.50 per 15. Five pens large MATURE hens mated to vigorous Cockerels, $1 per 15 eggs; $5 per 100. Eggs from these pens specially recommended for incubator hatching.

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Here is an opportunity to procure some A. 1 stock for beginners in the poultry business.

We have a limited number of choice hens of the single comb White Leghorn variety a year to one and a half years old at $15.00 per dozen and upward.

A fine selection of S. C. White Leghorn roosters at $2.00 and upward each. A limited number of fine S C. White Leghorn pullets 5 to 6 months old at $15.00 per dozen.

We not only manufacture incubators, Brooders and all kinds of poultry supplies but we are the most extensive hatchers of chicks in the world.

Write for prices on chicks.

Write for our New Illustrated Catalogue B.

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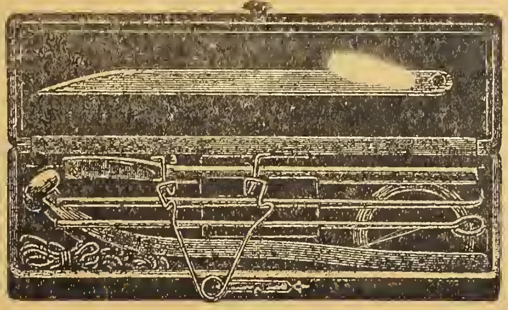
Over 30 prizes, specials and cups in **Buff, Black and White Orpingtons** on 27 entries this year at San Francisco, San Diego and Los Angeles. Bred for utility and egg purposes, as well as prize winning qualities. Eggs from $2 to $3 a setting. Write for free mating list, describing my ten prize vards. **P. L. Harley, Box C, Redlands, Cal.**



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World's Chick Feed of To=Day. The only original **Dry Chick Feed.** All others are worthless imitations. **Chamberlain's Perfect Chick Feed** was used exclusively at the great St. Louis World's Fair during the 7 months. This the highest compliment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.

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CHAMBERLAIN'S PERFECT MASH EGG FEED,

THE WORLD'S GREATEST EGG PRODUCER.

GERMAIN SEED CO.,

Pacific Coast Agents. **LOS ANGELES, CALA,**

SPECIAL PRICES ON TON LOTS.

Distributing Agents: FREDERICK BROWN, San Jose; CHAS. H NEARPASS, San Diego; CHANNEL COMMERCIAL CO., Santa Barbara and Ventura.

THE LAWN AND ITS CARE.

Continued from first page.

toothed rake or a specially constructed harrow; the latter for the purpose of accomplishing on a large scale the results obtained by the use of a steel hand rake on small areas. This treatment will produce a suitable seed bed for the reception of the fine seeds of the grasses.

After the seed bed has been thoroughly and carefully prepared and the grass seed scattered in appropriate quantities, according to the kind used, the surface should be given a careful raking or rolling if the area is dry. If showers have been frequent, raking after the seed has been sown will suffice until after the grass has reached a height sufficient to be clipped by a lawn mower. Prior to clipping the grass with a lawn mower, if the ground was not rolled after seeding, a heavy lawn roller should be passed over the surface in order to make it as smooth as possible. After the grass has an opportunity to become erect it should then be clipped with a mower.

HOW CHURNING BRINGS THE BUTTER

In a book on the dairy industry in New Zealand is to be found an account of what is called "The Theory of Churning," which brings forward several different theories on how and why churning brings the butter. We reproduce it for the information of our readers, and as a part of the history of the development of the dairy industry.

Although the theory is discussed from what might be called the scientfic standpont, yet there s a good deal of practical business sense in connection therewith; and we trust every reader will take the time to study it thoroughly, so that if ever called upon, he can explain the why and wherefore of churning.

We quote as follows: Several theories have been put forward to account for the phenomenon of churning. Thus, Fleischman holds the view that the globules of fat in milk are in a superfused condition and that churning is simply the phenomenon of solidification; with the recognition of the fact that the globules are solid at low temperature this view is untenable. Soxhlet holds that churning consists in the rupture of the solid membrane, which he believes exists round the fat globules; as the existence of such a membrane appears hypothetical this view cannot be accepted. Storch attributes churning to the gradual rubbing off of a semi-solid membrane of "mucoid substance," and this hypothesis has much to recommend it; the whole of the evidence points to the existence of a layer, which is not solid, round the fat globules. As previously stated, the author cannot reconcile Storch's theory that this layer consists of "mucoid substances" with known facts; but it appears very highly probable that there is a layer, the composition of which is for the present purposes immaterial, round each fat globule. As it is improbable that this layer is elastic, the effect of the impact of one fat globule on another will be to squeeze out the layers between them, and bring the globules within the sphere of each other's attraction. In this way nuclei will be formed, which will, on continued churning, increase in size; as the nuclei get larger and larger, the resistance, owing to fluid friction on their surfaces, will gradually bear a smaller and smaller proportion to the force tending to bring them to the surface, and at a given moment, the butter will "come." This theory is in accord with all the known facts. By microscopical examination of cream during churning the formation of nuclei of irregularly shaped masses of fat globules is noticed. As an irregular mass will occupy a greater apparent volume than a sphere, the transformation of spherical globules into irregular nuclei should be attended with the thickening of the cream, which is in accord with the facts; as the nuclei increase in size the layer condensed by surface energy round them will rapidly become less, so that the cream will gradually decrease in thickness; this decrease in thickness of the cream should take place later than the increase mentioned above, which is also the case.

When the butter is taken from the churn it is in fine grains, which are the nuclei referred to. On working, the fat globules are still closer to each other, and the butter is formed into a nearly homogeneous mass; small amounts of liquid are, however, left distributed throughout the mass, and as these liquid globules are very small and contained in a medium which, though solid, is still viscous, they are by surface energy transformed into spheres. The microscopical examination of butter shows a number of spherical globules of aqueous liquid in a nearly homogeneous medium, consisting of fat; there are, however, many fat globules left, which, by careful examination with little light (best by dark stage illumination), can be made out. The whole of the globules, usually seen, which are of all sizes, consist of aqueous liquids; in many cases where the globules are of sufficient size for the surface energy to become small, they cease to be spherical.

The reason that butter always does, and must, contain water is that the aqueous liquid present is finely divided, and assumes a spherical condition. It is impossible by pressure from the outside to remove small spheres from a homogeneous medium. It appears certain, from the experiments of Storch on the density of butter, that the density of the fat is the same as that af butter fat in the solid state. It is, therefore, solid in butter. This view is nearly universally accepted. Vieth, however, holds that it is liquid, because all the globules which are visible are spherical; it appears probable that he has overlooked the fact, only recently pointed out by Storch, that all the globules visible by the usual microscopical examinations are water globules.

With the recognition of the fact that butter is an approximately homogeneous fatty substance, the reason for its change of consistency of alteration of temperature at once becomes apparent. To churn butter of the right consistency it is necessary that the fat in the cream shall be of that consistency. As pointed out in Appendix A, the fat in cream which has been warmed very slowly solidifies. If the cream has been kept at a high temperature, as in summer, it is necessary to churn at a lower temperature, than if the cream has been kept at a lower temperature, as the effect on the consistency of the fat of cream of cooling for a long time at a fairly low temperature is the same as that of cooling for a shorter time at a lower temperature.

LATEST EGG-LAYING CONTEST

The latest egg-laying contest is that just concluded at the Kansas Experiment Station. The leading breeds were represented with a pen of a male and six pullets. The methods were those ordinarily employed, the idea being to bring out comparative results such as might be obtained by an experienced poultryman. The usual mixtures of green and soft feed were given, also vegetable food, oyster shells, grit and meat meal, but no fresh meat, pepper, patent foods or other stimulants.

During the twelve months of the contest the pen of White Leghorns laid 885 eggs; the Rose Comb White Leghorns laid 828, laying, however, a larger proportion of their eggs in the winter than the single comb pen. The American Reds laid 820 eggs and showed the best winter egg record. The White Wyandottes laid 779, the Buff Wyandottes 764, Barred Plymouth Rocks were not fairly represented, the females being yearlings, while those of the other breeds were pullets. The Brahamas were, as usual, slow in developing, but continued to lay well except in the spring. Probably for a longer time their relative showing would have been better.—Indianapolis News.

POULTRY RAISING ON THE FARM.

The raising of poultry is a business that has not yet received from the public the attention it deserves. Nearly every branch of trade is over supplied with workmen. The business of poultry raising opens a promising field for all who possess ambition and industry. The cost of raising poultry is small when compared with the high prices they command. For the small amount of money required I know of no other legitimate business that will bring quicker and better returns than poultry. It is a sure business when one understands it, because you can generally control the conditions which assures success if you will but attend to it. There is money in poultry and will be for years to come. The fact that so many fail to make a "go of it" is what makes it profitable. The products of the poultry represent so much cash. The demand is greater than the supply and so long as this is so the careful hard working man or woman will reap the results, while the indifferent will fail. Out of the same soil wheat and tares are produced. One presses forward to a definite aim, the other drifts here and there on the waves of circumstances. So our poultry operations may prove successes or failures in proportion to the amount of zeal and energy put forth.

At Fresno, say the papers, dried fruit is soaring. The price of peaches has gone to 8 cents a pound, which is believed to be the record up to this time in California.

At 8 cents for dried fruit the grower is assured of a return of from $350 to $400 an acre from his land.

There is little hold-over stock. An estimate made the past week is fifty carloads in all for the entire San Joaquin valley.

About Armona many orchards have been partially put out of business as far as this season is concerned, on account of the severe storms.

THE BOSS LADDER

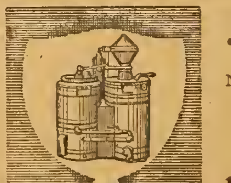
We have been making the Boss Fruit Ladder since 1895, and thousands of them are now in use. They are lighter, stronger and stiffer than any other make. A 10-ft. ladder weighs 25 lbs. so that girls and boys can handle them. Each step is braced with four wire braces. We will ship one or more to any S. P. R. R. Station in California, on receipt of price—30 cents per foot and prepay the freight.

Driver, Aber & Co., San Leandro, Cal.

Portable Buldings

Made in all sizes and for all purposes. Cut shows No. 48, 4-Room House, size 12 feet 4 5-8 inches wide, 24 feet 4 5-8 inches long, height of walls 7 8 or 9 feet.
Send for Our Catalogue, which gives photographs, prices and weights of other buildings.

Burnham-Standeford Co., 522 First St., Oakland, Cal.



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No Smoke — No Odor — Fully guarantee . You Want it in Your Homes.

Let Us Tell You About It.

SUPERIOR LIGHT AND HEAT CO.

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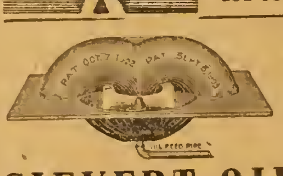

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The only safe and reliable burner on the market.
Send for full particulars.

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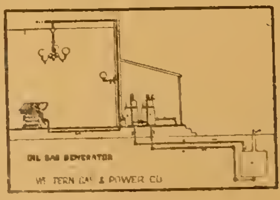

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For Lighting, Heating, and Cooking.

A beautiful 35 c. p. light for 5 hours for 1 cent. Twice as cheap as acetylene for lighting. Seven times as cheap for cooking. Absolutely safe, easily installed, guaranteed. No odor, no smoke.—does not clog burners. Automatic in every way. No winding, no pumping. Write today for "red" catalogue to

WESTERN GAS & POWER CO.
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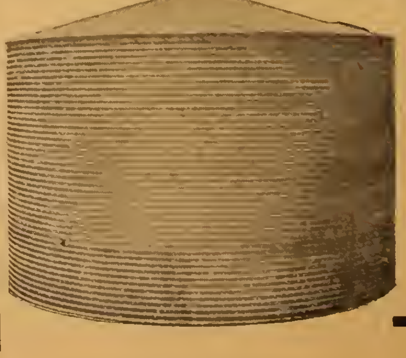

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STEEL TANK

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310-14 East Market St. — Los Angeles, Cal.

Queries and Replies

DREAD ANAHEIM DISEASE.

Editor Cultivator:—I have noticed some articles lately about the so-called dread Anaheim disease of the vine. As I am growing grapes in an infested district, I would like to give my theory about the disease and a probable remedy. My theory about the disease is this, that it works in the sap of the vine, passing down through the roots and out through the soil, so that the neighboring vines are affected, or else it is contagious by cast off spores blown about by the wind. But I favor most the first definition. We all know that when the disease gets a foothold it rapidly spreads until the whole vineyard is gone.

Now for the remedy. The disease works at all times of the year, so be well acquainted with your vineyard so that you will detect every affected vine, then go right after it with the shovel and dig it out root and branch. This remedy will not cost the vineyardist anything to try and it may be worth thousands of dollars to the State.

Here are a few of my observations: About four years ago several vineyards in my neighborhood began to be effected. The owners did not at once remove the diseased vines, so today these vineyards are a total wreck. I have been practicing this simple remedy for many years, and I still have seven acres of fine healthy vines of many varieties with only two or three vacancies in the field. Last year I lost six vines. This year two. A sick vine is worse than a sick chicken, because the chicken will sometimes fool you and get well, but a vine never.—G. D. Lee, Compton.

FEDERAL IRRIGATION.

Editor Cultivator:—Of the several different projects of Government irrigation mentioned in the Cultivator, which do you think the best location, climate and market facilities taken into consideration? When and how can such lands be taken up? How soon will they be completed, and in what order? Are there any provisions preventing "land grabbers" from taking the choice lands? Will you kindly answer in Cultivator or by letter?—A. R. S., Beaumont.

(The above letter was forwarded to the office of Mr. J. B. Lippincott, Government Engineer, with a request for information in answer to this and various other inquiries along similar lines. His reply is given in full below:)

Editor Cultivator:—I wish to acknowledge receipt of your favor of the 11th, in which you refer to me a letter from A. R. S., Beaumont, Cal., asking for information concerning Federal irrigation projects.

On the Yuma project, water will not be ready for delivery for twelve months. It would be impossible to begin extensive irrigation in that district, therefore, for a year. Lands in that district can now be obtained for very reasonable prices, and there is a demand for labor in connection with the construction of the irrigation works. For information concerning the lands and business opportunities, it would be proper to communicate with the Yuma Water Users' Association, which is the organization that is contracting with the Secretary of the Interior for the delivery of the water.

On the Klamath project, two canals are now being purchased that are furnishing water for the irrigation of about 10,000 acres of land. Lands can be purchased at reasonable figures under these canals at the present time. The water from the new Government ditches will not be available for irrigation for twelve months.

On both the Klamath and Yuma projects, the public lands that will be irrigated at an early date are already filed upon, although there remains on both projects large areas of public lands which will be available for entry at some time in the future.

For information concerning the Klamath project, I would advise that your patrons correspond with the Klamath Water Users' Association at Klamath Falls, Oregon. These water users' associations are organizations for the purpose of dealing with the Federal Government and we usually turn over correspondence to them from parties who are making inquiries looking toward settlement of the land.

Yours very truly,
J. B. LIPPINCOTT,
Supervising Engineer.

A CORRECTION.

In our issue of the 13th instant, under the head of "California Pippins," a paragraph was left out of Prof. Hilgard's letter in the copy sent to this office. This has been forwarded with a request to publish, and the same follows herewith:

"There should also be tried alongside of the Thomas phosphate a good superphosphate. The superphosphate however, had also better be put in deep, because in the Watsonville soils it would be apt to stay within the first few inches of the surface."

THE BEST RHUBARB.

C. H. P., San Luis Obispo. We believe the Crimson Winter Rhubarb to be the best for California, more especially the southern part of the State. You seem to have left out a part of your second query, which reads, "and is a budded tree as good as a grafted one?" It makes some difference what sort of a tree it is. As a rule, however, the grafted is best, but costs more.

The Analy Standard has the following item on improvement of its public roads: Supervisor J. G. Armstrong has placed 1400 tons of crushed rock on the roads in the immediate vicinity of Sebastopol during the past three years, and will have put 2000 tons by the close of this season. Besides this he has put $3500 worth of oil on the roads leading out from Sebastopol during the same three years, and will have put $5000 by the coming fall.

Word has reached Vallejo that the $3,000,000 bonds of the San Francisco, Vallejo and Vaca Valley Electric Railroad Company have been sold, and that arrangements are about complete for the commencement of construction work on the branch road between Vallejo and Benicia right away.

Congressman McKinlay's bill allowing the waters of the Sacramento river to be diverted for irrigation purposes has been passed. It is estimated that over 200,000 acres of the most fertile land in the Sacramento Valley will be supplied with enough water to make it produce immense crops of alfalfa and beets.

Several large auction sales of draft and wagon horses have been held in San Francisco during the past month, and the prices obtained were far in excess of those expected by the shippers. This goes to show that the price for draft horses is rising. The same conditions obtain in all the Eastern stock markets.

One grower in the southern part of the state was recently offered $8,000 for the crop of Valencias on six acres of land—and refused the offer. There are a good many such cases throughout the citrus belt.

There are now 2500 hogs on Mr. McKim's ranch east of Imperial.—Standard.

Redlands has shipped to date 7,518 cars of oranges and 1427 cars of lemons. The orange shipments are now 2402 in arrears of last year. The Citrograph says: "The prices will remain high if everybody does not get crazy to ship all at once."

The Western Gas and Power Co., formerly 212 Sansome Street, San Francisco, are now located at 1846 7th St., Oakland, where they are prepared to transact business as usual. Their advertisement appears in the Cultivator under the heading of "Cheapest Home Gas for Lighting, Heating and Cooking." Our readers will secure any information desired by writing for "Red" catalog.

The G. W. Price Pump Co. of San Francisco, whose shops were totally destroyed in the great fire, have opened a temporary office at 105 8th St., Oakland. They were fortunate in having a large stock of goods at Los Angeles and Visalia from which orders can be filled with promptness. A site has already been selected for their new works, and they will be in full running order very soon. Their advertisement in the Cultivator shows their old address in San Francisco, as their announcement was received too late to make the correction.

REMEMBER.

We cannot answer questions the same week they are received. Often we have to send to outside parties for data which takes some days to receive.—Editor.

IT'S PENNY WISE
Policy to set out a good tree, costing good money and then let the sun burn the bark, or the rabbits gnaw it when for $1.00 an acre you can get Yucca Tree Protectors that are practically indestructible. Write for free sample of the wrap. Yucca Mfg. Co., 2124 Willow St., Los Angeles.

Canvas Goods
Largest Manufacturers on the Pacific Coast

Tents
We manufacture everything from a prospector's tent to a circus top. Tents for lemon curing, fumigating, camping and living.

Awnings
For business blocks and for home use. Handsome stripes to match.

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FOR CLEANSING MILK CANS, BOTTLES, AND ALL DAIRY UTENSILS
AS WELL AS ANYTHING IN THE KITCHEN OR LAUNDRY
20 MULE TEAM BORAX
Is Unsurpassed. Sold by all dealers in Packages. ☞Send for Free Sample.
PACIFIC COAST BORAX CO., 114 Sansome St., San Francisco, Cal.

Household Department

A WOMAN'S CLUB.

What is a woman's club? A meeting ground
For those of purpose great and broad and strong
Whose aim is toward the stars; who ever long
To make the patient, listening world resound
With sweeter music, purer, nobler tones.
A place where kindly, helpful words are said
And kindlier deeds are done; where hearts are fed;
Where wealth of brain for poverty atones,
And hand grasps hand, and soul finds touch with soul.
Where victors in the race for fame and power
Look backward even in their triumph hour
To beckon others toward the shining goal.

What is woman's club? The fabric of a dream
Touched with an altar coal and made alive,
Instinct with hope for those who toil and strive
And wait to catch that joyous day's first gleam
That ushers in a better, freer age.
When right for one shall be for all the right;
When all who meet in life's recoil and fight
The war for right and truth shall bravely wage.
—Helen M. Winslow, in Club Member

WHY IS THE WOMAN'S CLUB VALUABLE.

Editor Cultivator: You ask me why the Woman's Club is valuable for women. I can better speak for myself from a personal point of view. When I first became a member of our club I had had no experience what ever in doing things in a public way, nor had I seen much of women in any way but domestic and socially I did not know a woman could have ideas on public matters and express them. I supposed her duty lay wholly in housework and caring for the family, sewing, baking and the like. When I was induced to join our club it was the about a year old with some fifty members or more. I was amazed to see women stand up and talk in public about matters other than domestic. I soon found that they could discuss public quetions, civic topics, tell how to beautify the home in a hundred ways I had not before dreamed of in my little world of ac ton. I became inerested in the meetings. I bought papers and books on subjects to be treated by the ladies at our meetings, and found them intensely interesting. By and by I was appoined to read a paper on "roses." I wrote to a practical rose grower for some facts and he gave them to me. With these and others I acquired and by studying different varieties growing in my garden and in the gardens of my neighbors, I got together quite an array of interesting data which I proceeded to write down and read. Well, I learned more about the rose family in California thanI supposed was to be known, and I also found that I had interested my fellow members, for they talked about my paper and thought it real good. Of course I was pleased and had gained a little knowledge from personal effort. Ever since I have been studying roses and other flowers and my household duties haven't suffered in the least by my endeavors.

I found that I could spend an hour or so every week looking up questions at home for discussion at the club, and by so doing rest myself from work and feel in much better mood physically to do my work. My experience is the experience of every woman who goes into the club with a view of helping others and at the same time helping herself. I think the club is helpful to women in many ways and for many reasons a few are mentioned from personal experience.

First it takes a woman out of her work-a-day life and gives her new ideas. It broadens her mind. She gains helpful suggestions from others. She finds there is a place in the world for her outside of her house.

Second, it furnishes a medium for better social acquaintance with her neighbors which she can not get in any other way. If she hasn't this medium only the church is left, and you know a woman in a small town doesn't always go to church every Sunday and she may not see her neighbors once a monht, and then only to pass the time of day, for it is hurry Sunday morning to church and hurry home to get dinner and the opportunity to visit much is out of the question. At the club there is more time—and then only women are there to participate.

Third, it is helpful in that it gives woman a better idea of her sex; It inspires her with confidence in woman's work and her ability to be helpful outside the confines of her home.

I have received valuable suggestions as to certain things I may do for my boy and girl, for my husband, how I may make my home attractive and how I may interest my husband and children in our home that I could not have gained in any other avenue of practical work.

I do not find it necessary to slight my home life and my wifely duties to belong to our woman's club. Socially mentally and physically, it has been helpful to me. I could give you other reasons for my faith, but you ask me to me brief.—Mrs. R. B. J., Ventura.

THE RIGHT MAN.

Boss—"I want a man to take charge of the information bureau; he must be a man that can answer any amount of questions and not lose his head."

Applicant—"Well, I'm the father of eight children."

She—You are depressed. I didn't know you cared so much for your uncle.

He—I didn't; but I was the means of keeping him in an insane asylum the last year of his life and now that he has left me all his money I've got to proved that he was of sound mind. —Tit-Bits.

Hicks—He's very wealthy.

Mrs. Hicks—Yes, and very stingy and economical.

Hicks—Don't be sure of that. You can't judge a man by his clothes.

Mrs. Hicks—I don't. I'm judging him by his wife's clothes.—Philadelphia Ledger.

HIS FATHER KNEW,

A college student, in rendering to his father an account of his term expenses, inserted: "To charity, $30." His father wrote back: "I fear charity covers a multitude of sins."

THE WIFE'S RIGHT.

Editor Cultivator:—I am told that the laws of California are such that a second wife has no right to her husband's property unless she can prove that she has by her own hard labor helped him acquire what he possesses, and that she can lay no claims on any part of anything he owned when or before she became his wife unless he has left her something in a will or testament. What I want to know is am I rightly informed?—L. A., Santa Ana.

If the property was owned by you before marriage your wife has no community interest in it. If you die without a will she will become your heir unless you have children by the former wife, in which case she can only come into one-half the estate. Best way is to execute a will or consult some reliable attorney.

NOW THE LADIES.

The Cultivator will be glad to publish helpful hints, tested receipts, and household suggestions from the lady readers. Write not over 500 words, on one side of the paper, and sign your name to your communication, not to be published, but as a reference.

Young ladies, misses, matrons and all invited to give us their ideas on household topics. Club women are requested to suggest thoughts along civic improvement lines.

Lettuce and radishes are two crops that may be grown every month in the year. They have "all seasons for their own."

JAMES R. TOWNSEND
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Will be in effect every day, Feb. 15 to April 7, and Sept. 15 to Oct. 31, 1906, from all points in the east and south.

Following are a few:

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St. Louis... 30.00
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California illustrated literature mailed free to any address or may be had from Santa Fe representatives.

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Colonist tickets are honored in tourist sleeping cars which run via the Santa Fe to Los Angeles and San Francisco.

Hints for the Cook

PUMPKIN PIE.

To each pie add 1 level teaspoon cornstarch. Use plenty of spices and no one will ever guess it is minus eggs.

* * *

CREAM PUMPKIN PIE.

Mixing 3 heaping teaspoons sifted pumpkin with 1 heaping tablespoon flour, and add 3 cups rich milk. Season to suit taste and bake in slow even.—Mrs. J. W.

* * *

PLAIN CAKE.

Cream ¾ cup sugar with butter size of an egg. Add 1 cup buttermilk and sift in 1 teaspoon each of soda and baking powder with 2 cups flour. Flavor to suit taste, beat well and bake slowly 1 hour.—Mrs. J. W.

* * *

BROWN CAKE.

Cream 1 cup sugar and ¼ cup butter, add 1 cup buttermilk and 2 cups flour in which has been mixed 1 teaspoon each of cinnamon and soda and ½ teaspoon cloves.—Mrs. H. S. M.

* * *

CHEAP CAKE.

To 1 cup of molasses add 4 tablespoons pork fat, 1 tablespoon ginger, 1 tablespoon soda dissolved in 1 cup boiling water, and flour to thicken to a stiff batter.

* * *

MARBLE CAKE.

Light part: 1 cup sugar, ½ cup butter, ½ cup sweet milk, whites of 3 eggs, 2 cups flour, 2 teaspoons baking powder, flavoring.

Dark part: ½ cup brown sugar, ¼ cup butter, ¼cup sweet milk, yolks of 3 eggs, ½ cup molasses, ½ teaspoon each cinnamon, cloves allspice and nutmeg, ½ cup raisins, 2 cups flour, 2 teaspoons baking powder. This recipe never fails. The dark part makes a fine fruit cake by adding fruit. The light part also is nice frosted with cocoanut.—Clara S.

* * *

ORANGE WINE.

One dozen oranges to a gallon of water and 3 pounds of sugar. Pare the oranges thin and take off the white pith. Mash well and then put all the juice, oranges and water together. Let it stand for 24 hours, then strain it off and pour into a barrel with the sugar, half the peel.—O., Duarte.

* * *

When it is not possible to have ice meat may be kept fresh for several days through very hot weather by immersing it in freshly soured milk. Put the meat into a crock or crockery bowl, cover entirely with the milk and set in a cool place. Change the milk at intervals of twelve hours.

Chewing gum in moderation is recommended by dentists, for the teeth. It is also advised by doctors to be practiced for half an hour after each meal, to assist weak and faulty digestion. This applies to dyspeptics and not to school children who are not generally troubled with weak stomachs, and are often accused of being able to digest ten penny nails.

The practice of keeping the jaws wagging continuously does more harm than good.

Those who have not planted their rose bushes should do so at once. They will get a much better start now than if the start is delayed until hot weather.

IMPROVE RURAL SCHOOL GROUNDS.

In our State it is too often the rule that the plainest, most barren and least ornamental spot in each community is the district school. This is a sad state of affairs. In the first rush of settlement, when there were so many things to do, or during "boom days," there was some excuse for it, but at the present time there is no excuse for it whatever. The agricultural department has seen the need and has published a bulletin on the planting of trees in school house grounds and another on school gardens.

The country school boards should offer prizes of various kinds to the children showing the best and most tasteful improvements in the school grounds, in the way of planting trees, vines, shrubs, rose bushes and flowers, the laying out of paths, etc. It is time to be doing these things. In fifty years more the West should look like they had been finished up by loving and painstaking hands.

There has been a great deal of talk lately in regard to the teaching of agriculture and horticulture in the rural schools. Great good could be accomplished in this way if there were teachers qualified for the work, but the so-called normal schools turn out too many drilled teachers, who do little in the real teaching of nature. If the country school teachers could all be given a short course in agriculture and horticulture we might after a while have men and women prepared to take up the work in an elementary way in the rural schools. The short courses at the University of California come in the summer months when the teachers are having their vacation. These might be made a strong force in the progress of nature teaching. With teachers enthused for the ork, there would soon come some application of what they have learned in the planting and beautifying of the school grounds. There is nothing like the actual work in planting trees and flowers and caring for them to make children fond of nature and her products, and there is nothing better calculated to drive the young people from the farm than the comfortless and ugly schoolhouses and their ill-kept surroundings. Getting the young people inerested in plant life will be apt to draw them to the Farmers' Institutes, and the Institutes will never accomplish what they should in the education of the farmer till they catch him young enough.

THE NATURE OF YEAST.

Yeast is a plant. It belongs to a class known to botanists as fungi. The particular genus of plants to which yeast belongs is saccharomyces, so named because the members of this genus live mostly in saccharine or sugar solutions, where they convert sugar into alcohol. Yeast plants are a little higher in the scale of development than bacteria. They are unicellular and reproduce by budding. Bacteria reproduce mostly by simple division. It is quite possible by watching active yeast cells under the microscope to observe the budding process. As soon as yeast cells are immersed in a suitable medium they begin to expand and grow. After a time the round yeast cells become slightly elongated through the formation of small protuberances at one end. This grows until a neck is formed by a contraction of the cell wall. If the growth continues the strangulation referred to proceeds until the cell wall completely shuts off the protuberance, which then constitutes a new daughter cell attached to the mother plant. This is the reproduction process known as budding.

One yeast cell is capable of giving off several buds in succession, but after a time its reproductive energy is exhausted and the cells break up. The daughter cells give rise to new cells, and thus the multiplication continues very rapidly. Simultaneous with the progress of this growth and development, sugar is being decomposed and alcohol and carbon dioxide formed. It is this carbon dioxide which is given off as a result of the growth of yeast added to bread or other substances which causes our bread to rise.

The most favorable temperature for the growth of yeast lies between 77 and 95 degrees Fahrenheit. Between these point yeast flourishes and grows well. At temperatures lower than 77 degrees the growth proceeds, but not so rapidly. At a temperature as low as 49.6 degrees Fahrenheit the growth of yeast is entirely arrested. The vitality of the cell, however, is not injured by such a temperature and growth will begin immediately upon putting it under favorable conditions. Actual freezing does not destroy the yeast cells, provided they do not become ruptured or injured. A temperature above 95 degrees Fahrenheit weakens yeast sells and a temperature of 140 degrees causes coagulation of their protein, resulting in their destruction.—Farm Science.

Congress has voted $20,000 for the immediate use for the re-survey of the Imperial Valley.

An Instance.

"Who is that little old woman who applied for a niche in the Hall of Fame and was refused?"

"Don't know, but she seems familiar."

"The committee said she was not entitled to the honor because her work was nonsense."

"Oh, I know her now—it's Mother Goose."

An odd church is that in the redwood forest near San Jose. It is maintained by the miners, and has a miner as minister. It is built in one of the hollow trees and accommodates a congregation of twenty-five, with space for a recess chapel, which contains a small organ.

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SOUTHERN PACIFIC

OUR WHEAT CROPS.

An American professor of one of our agricultural colleges, speaking at a banquet in Europe about America and her advantages, had a Scotchman call his attention to the fact that America with her great agricultural institutions and her advantages of rich soil was now producing a yield of wheat the average of which was only thirteen bushels to the acre, while in England the average was twenty-nine. It is a deplorable fact that America is not doing its best in the production of any grain product. America once held first place in the production of wheat, but now holds fourth place. We have millions of worn out acres and as yet many have not learned to farm. Although a corn country, we are not coming up to our possibilities in this line, or any ways near it.

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LOS ANGELES PRODUCE EXCHANGE

A visit to the Produce Exchange of Los Angeles, at the junction of Central and Towne avenues, would prove a pleasant and instructive surprise to a majority of those interested in our local produce markets. Few are aware of the magnitude of the dealings in staple produce; nor could they be before the reorganization of the local exchange.

Prices of all products are published on the boards daily as well as receipts by rail, steamer and team. A system of collection of general information regarding the market products of Southern California is carried on by the secretary, J. Mills Davies, who has had wide experience in the work of the Produce Exchange, having been secretary of the first organization and upon the re-organization of the exchange last November, he was again selected for this position.

This fruit and produce business is growing so rapidly that it is believed it vill eventually become the leading industry of the Southwest and will add millions of wealth to Southern California.

The Produce Exchange of Los Angeles is the pivotal point around which a vast amount of the produce business swings. Week after week the exchange is widening its field of influence. The organization has grown remarkably since its reorganization last November. At that time there were twenty produce dealers connected with the institution, but during the past five months forty-one new members have been admitted.

Secretary Davies gives the following interesting statistics:

"The sales of eastern butter in Los Angeles now exceed in value $250,000 annually; and some of the wholesale produce and fruit firms of this city transact business with consumers in every State in the Union, as well as with customers in Mexico, British Columbia, Hawaii, Europe and trans-Pacific ports.

One Los Angeles firm handles over 1,250,000 pounds of butter annually, and also handles more bananas than any other firm in California. Last year's Orange County celery shipments netted the growers $300,000. The gross receipts for the present season are estimated at $600,000. The movement of hay in Southern California, the bulk of which is handled by Los Angeles firms, mounts up to more than 500,000 tons, and of this the city of Los Angeles alone consumes over 80,000 tons each season. One firm in this city handles 25,000 tons of hay per annum, valued at $300,000. The shipments of oranges and lemons to the East last season aggregated 30,000 carloads, and this will probably be excelled this season. These are but pointers to show to what an enormous extent the produce business of this section is expanding."

A glimpse into the handsome quarters of the local Produce Exchange at Central and Towne Avenues would certainly give all new ideas regarding local produce. A systematic acquirement of knowledge regarding the produce market is there carried on by Secretary Davies, who has a well-established reputation as an expert statistician and who has kept in close touch with our produce market for the past score of years. A daily call of the staple products of the market is made before the assemblage of representatives of all the principal wholesale houses, and there is buying and selling, and a daily settlement of prices on articles which fluctuate because of the incoming or outgoing of specially large shipments.

The Produce Markets

Los Angeles Markets.

Los Angeles, April 25, 1906.

Potatoes, beans and onions are commodities which show a marked increase since the San Francisco disaster and a rise may be expected on all staple products.

Butter.

B. of T. Creamery, per roll	.50
Valley Creamery, fancy	.48
Valley Storage	.46@47

Cheese.

Cal. 3-lb. hand	.17½
Cal. Young America	.16½
California Anchor	.15½
Northern	.16@17
Domestic Swiss	.19@20
Imported do	.26½@27

Eggs.

Eggs, Fresh Ranch	.22

Poultry.

Fryers, 2 1-2 lbs	.21
Broilers, under 2 lbs., per lb.	.19@21
Young Roosters, per lb	.19
Hens, per lb	.15
Ducks, per lb	.14@15
Geese	.14@15
Turkeys	.19

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock:

Hogs, 200 lbs	.6
Prime Steers	.4½
Cows	.3¼
Calves, per lb	.5
Sheep, ewes, per head	.4.50
Wethers	.5.00

Potatoes.

Northern, per sack	$1.85@2.00
Locals, per cwt	1.75@2.00
Locals, new, per lb	.4½@5
Sweets, white, per cwt	.3.00
Sweets, yellow, cwt	.2.50

Vegetables.

Onions, Aust. Brown, cwt	1.50@2.00
Onions, yellow, cwt	.2.00
Garlic	.7@8
Cabbage, per sack	1.00@1.35
Cauliflower, per doz	.60
Asparagus	.8@9
Lettuce, per dozen	.20@30
Bell Peppers	.20
Chili Peppers	.20
Cucumbers. per doz	.60@1.23
Radishes, per doz	.15
Lima Beans	.10@15
String Beans	.8@10
Beets	.40
Green Onions, doz. bunches	.20@25
Carrots, doz. bunches	.25@35
Turnips, doz. bunches	.25
Celery, per doz	.45@50
Peas, per ℔	.3@5
Oyster Plant	.40
Tomatoes, local	1.00@1.50
Parsley, per doz. bunches	.75
Pie Pumpkin, per lb.	.01

Citrus Fruits.

Lemons, standard	1.65@1.75
Lemons, choice	1.50@1.60
Navels, extra fancy	2.25@2.50
Navels, choice	2.00@2.25
Grapefruit	1.75@3.00

Fresh Fruits.

Pear, Winter Neils, per box	.4@6
Pippins	1.90@2.00
Ganos	2.25@2.75
Permains	1.90@2.00
Dewberries	.35
Strawberries, per box	.10@18

Dried Fruit.

Apples, evaporated, ex, ch, 10; ch 9½.
Apricots, ex ch, 11; fy, 8½; ch, 7½.
Peaches, fy, 10½; ch, 9.
Santa Clara Prunes, 30-40, 8½, 40-50, 7½, 50-60, 7; 60-70, 6½.

Beans, Dried.

Limas	5.00@6.00
Pinks, fancy	2.50@3.00
Lady Washington	3.15@3.25
Small White	3.75@4.00
Black Eyes	6.00

Honey.

Honey, comb frames	13½@14
White, Strained, per ℔	.6
Light Amber	.5
Amber	.4½
Beeswax	.27

Hay.

Barley, No. 1	14.00@15.00
Alfalfa, local	13.00@14.00
Alfalfa, Northern	12.50
Wheat. No. 1	16.00
Tame Oats	18.00

Grain.

Selling prices of mill stuffs f. o. b. cars L. A., in quantity, are:

Rolled Barley	1.40
Bran	1.25
Feed Corn Meal	1.45
Shorts	1.45
Wheat, per cwt	1.65
Cracked Corn	1.40
Oil Cake Meal	2.25
Cocoanut Meal	1.55

San Francisco Markets.

(When the San Francisco market assumes anything approaching its normal condition, that is, when the prices for agricultural products there bear favorable comparison with those of the country surrounding, the reports in these columns will be resumed. Until such time, however, all quotations made are practically valueless.—Ed.)

CITRUS MARKETS

NEW YORK, April 24.—Twenty-three cars sold at auction today. The market is very strong. The weather is favorable.

NAVELS (Vent.)

Orchard, or, National Or. Co.	$ 3.35
Standard, st., National Or. Co.	3.05

THOMPSON IMPROVED NAVELS (Vent.)

Orchard, or, National Or. Co.	3.50

ST. MICHAELS (Vent.)

Selects, ch, San Antonio Ex.	2.05
Telegraph	2.05

LEMONS (Vent.)

Independent, ch, Highlands	2.55
Independent, fy, Highlands	.90
Stearns, st, C.C.U., Rialto	1.55
Lighthouse, st. C.C.U., Rialto	1.50

NAVELS (Iced)

Red Globe, xc, Riverside Ex.	2.70
Red Globe, xc, Riverside Ex.	2.60
Riverside, st., Riverside Ex.	2.75
Riverside, st., Riverside Ex.	2.80
Blue Globe, xf, Riverside Ex.	2.85
Blue Globe, xf, Riverside Ex.	3.15
Ben Hur, ch. R.-H. Exchange	2.60
Royal Knight, xf, R.-H. Ex.	2.70
Greyhound, ch, San Antonio Ex	3.05
Quail, xc, O-C Exchange	3.05
Iris, xf, Duarte-Mon. Exchange	3.45
Calif, sweet, West H. Cit. Assn.	2.70
Poinsettia, fy, C.C.U. Highgrove	3.05
Blossom, ch, C.C.U. Redlands	2.80

Summit, xc, C.C.U. Redlands	2.80
Marguerite, xc, C.C.U. Highg've	2.30
Triumph, xc, C.C.U. Highgrove	3.05
Gold Coin, xc, C.C.U. San Dimas	2.95
Lilac, ch, C.C.U. San Dimas	2.65
Lighthouse, st, C.C.U. San Dimas	2.40
Lighthouse, st, C.C.U. San Dimas	2.40
Clover, xc, Redl. Or. Gro. Assn.	2.55
Rose, xf, Redl. Or. Gro. Assn.	3.20
Old Mission, ch, C. C. Chapman	2.60
Golden Eagle, st, C. C. Chapman	2.75
Old Mission, fy, C. C. Chapman	3.10
Clover, xc, Redl. Or. Gro. Assn.	2.75
Golden Gate, xc, Redl. G.O.A.	2.80
Golden Flower, fy, Redl. G.O.A.	3.00
Corwin, fy, W. S. Corwin	2.80
Corwin, fy, W. S. Corwin	2.95
Carnation, xc, Moulton & Greene	2.95

SEEDLINGS (Iced)

Independent, fy, Highland	2.65
El Morino, ch, San Marino G. P. A.	2.80
Titus Ranch, xc, San Marino G. P. A.	2.90

ST. MICHAELS (Halves)

Swan, fy, R-H Exchange	1.45
Camellia, xf, C.C.U. Redlands	1.45
Monogram, fy, C.C.U. Redlands	1.30

BLOODS (Whole boxes)

Southland Beauties, fy, G.C. Ex.	3.00
Leader, xc, G. C. Exchange	2.95
Triumph, xc, C.C.U. Highgrove	2.50

BLOODS (Half boxes)

Blue Globe, xf, Riverside Ex.	1.55
Blue Globe, xf, Riverside Ex.	1.55
Quail, xc, O-C Exchange	1.60
Violet, ch, Duarte-Mon. Ex.	1.45
Southland Beauties, fy, G.C. Ex.	1.05
Poinsettia, fy, C.C.U. Highgrove	1.45

GRAPEFRUIT (Iced)

Southland Beauties, fy, G. C. Ex.	3.95
Leader, xc, Q.C. Ex.	3.15
Iris, Duarte-Mon. Ex.	4.85
Iris, xf, Duarte-Mon. Ex.	3.75
Violet, ch, Duarte-Mon. Ex.	3.55
Independent, fy, Highlands	4.25

TANGERINES (Iced)

Quail, xc, O-C Exchange	1.55
Pet, xc, O-C Exchange	1.55
Blue Globe, xf, Riverside Ex.	1.35
Bear, xf, O-C Ex. (¼ boxes)	1.20

Foreign Lemon Sale.

NEW YORK, April 24.—Sixteen thousand boxes of Sicily lemons were sold at auction today. The prices realized were 10c lower on account of the poor condition of the fruit. The next sale will be held on Wednesday, when 20,000 boxes will be offered. Prices realized today were at follows:

Fancy 300s	$2.65 to $2.90
Choice 300s	2.30 to 2.50
Fancy 360s	2.85 to 3.05
Choice 360s	2.60 to 2.80

Boston Market.

BOSTON, April 24.—Twenty-five cars of oranges were sold at auction yesterday. A car of Blue Globe oranges was sold for the benefit of the San Francisco sufferers today and grossed $2180.

NAVELS (Vent.)

Pet, xc, San Antonio Ex.	$ 2.45
Tunnel, ch, Semi-Tropic Ex.	2.55
San Fernando Rey, fy, S.-T. Ex.	2.65
San Fernando Rey, fy, S.-T. Ex.	2.80

NAVELS (Iced)

Calif. Orange, st, Riverside Ex.	2.05
Red Globe, xs, Riverside Ex.	2.25
Red Globe, xc, Riverside Ex.	2.30
Blue Globe, xf, Riverside Ex.	2.70
Square, or, Riverside Ex.	2.85
Square, or, Riverside Ex.	2.85
Square, or, Riverside Ex.	2.95
Urchin, st, Semi-Tropic Ex.	2.10
Swan, fy, R-H. Exchange	2.45
Quail, xc, O-C Exchange	2.85
Florencia, fy, J. M. Riley	2.20
Gabriella, fy, Ind. Frt. Co.	2.40
C. S. O.	2.45
Peacock, xc, Worthley & Strong	2.50
Moreno Valley, Worthley & S.	2.65
Moreno Valley, Worthley & S.	2.90
Cosmos, xc, West High. Cit. A.	2.55
Cosmos, xc, West High Cit. A.	2.65
Elk, xc, Riverside Frt. Co.	2.60
Alpha, xc, Riverside Frt. Co.	2.95
Chief Joseph, xf, Riv. Frt. Co.	2.65
Clover, xc, Redl. Or. Gro. Assn	2.70
Clover, xc, Redl. Or. Gro. Assn.	2.80
Atlas, xc, Redl. Eclipse Assn.	2.75
Gate	2.85
Tea Party	2.95
Pilgrim, fy	3.05
Mixpah, xf, Redl. Or. Producers	3.00
Flower, fy, Upland District	3.10

SEEDLINGS.

La Hermosa, fy, Hasson Bros.	2.15
Moreno Valley, fy, Worthley & S	2.55

BLOODS (Whole boxes.)

Blue Globe, xf, Riverside Ex.	2.85

BLOODS (Half boxes.)

Blue Globe, xf, Riverside Ex.	1.45

GRAPEFRUIT.

Elk, xc, Riverside Fruit Co.	3.05
Alpha, xf, Riverside Fruit Co.	4.05
Quail, xc, O-C Exchange	4.05
Crocus, xf, W. High. Cit. Assn.	2.70
Canna, fy, West High. Cit. Assn.	2.00

St. Louis Market.

ST. LOUIS, April 24.—Seven cars were sold at auction yesterday. The market is steady. Weather cold.

NAVELS (Iced.)

Holiday, st, S. B. Co. Frt. Ex.	$ 2.65
Eagle, xc, Riverside Ex.	3.10
Yankee Doodle, st, Riv. Frt. Co.	2.75
Calif. Orange, st, Riv. Ex.	2.85
Old Baldy, ch, C.C.U. Ontario.	2.90
Newsboy, or, R-H Exchange.	2.90
Ben Hur, ch, R-H Exchange.	2.95

BUDDED SEEDLINGS.

Pepita	1.65
Victory, xc, C.C.U. Fullerton	2.55
Dragon, st, C.C.U. Fullerton	2.60

LEMONS.

Blondina, st, Johnston Frt. Co.	2.40
Victory, xc, C.C.U. Fullerton	3.30
Festival, ch, Johnston Frt. Co.	3.20

MEDITERRANEAN SWEETS.

Victory, xc, C.C.U. Fullerton	2.90
Dragon, st, C.C.U. Fullerton	2.95

The teats of some cows are very tender, and many cows kick because it hurts them to be milked, whereas their kicking is often interpreted as a sign of bad temper. It is a good plan to take the mildest view possible of a cow's kicking. It seldom pays to punish a cow, even for bad habits. Get her out of her bad habits through kind treatment.—Farmers' Friend.

Success Pumping Portable Traction **Engines**

Gasoline and Distillate

Quality the Best. Prices the Most Reasonable.

Write for Terms and Descriptions.

Agents Wanted.

International Gas Generator and Power Company

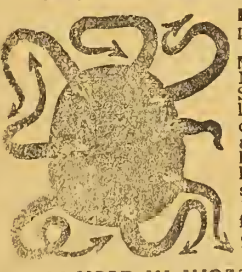
717 N. Main St. - Los Angeles, Cal.

Mention Cultivator

OPIUM and **Whiskey Habits** cured at home without pain. Book of particulars sent **FREE. B. M. Woolley, M.D., Atlanta, Ga.**, 103 N. Pryor St.

I WILL GIVE $1000

IF I FAIL TO CURE ANY CANCER OR TUMOR



I Treat Before it poisons deep glands. **NO KNIFE OR PAIN. No Pay Until Cured.** No X Ray or other Swindle. A Pacific Island plant makes the cures. **Absolute Guarantee.** Any tumor, lump or sore on the lip, face or anywhere six months is cancer. **130-Page Book** sent free with testimonials of thousands cured. Write to them.

ANY LUMP IN WOMAN'S BREAST

is CANCER and if neglected it will always poison deep glands in the armpit and kill quickly.

Address DR. & MRS. DR. CHAMLEY & CO.

Most Successful Cancer Specialists Living.

25 Third St., San Francisco, Cal.

KINDLY SEND TO SOME ONE WITH CANCER

EXCURSION RATES TO EASTERN CITIES.

The Usnal low round trip rates to the east will be available this season from California and Nevada stations of the Salt Lake Route on account of various conventions as follows:

New Haven, Ct.—Knights of Columbus—Sell May 24, 25. 26—Return limit August 31. Rates will be announced later.

Denver. Colo.,—B. P. O. Elks—Sell July 17, 18, 19—Return limit Sept. 30. Rate $55.

Minneapolis. Minn.,—G. A, R.—Sell August 7, 8, and 9.—Return limit Oct. 31. Rate $70.

Milwaukee, Wis.,—Order of Eagles—Sell Aug. 7, 8, 9.—Return limit Oct. 31. Rate $74.50.

Also sell July 2 and 3—Return limit 90 days Sell August 7, 8, 9, and Sept. , 9 and 10—Return limit Oct. 31.

Chicago, Ill.,—72,50—St. Louis Missouri, $67.50.

St. Paul, Minn. $70.00—Minneapolis, Minn. $70.00.

Kansas City, Mo.,—$60.00—Omaha, Nebraska, $60.00.

Council Bluffs, Iowa, St. Joseph, Mo. $60.

Tickets will be sold going via Salt Lake Route and connections and returuing via entirely different route, if desired, For full particulars as to stop off privileges, etc., application should be made to Salt Lake Route Agents.

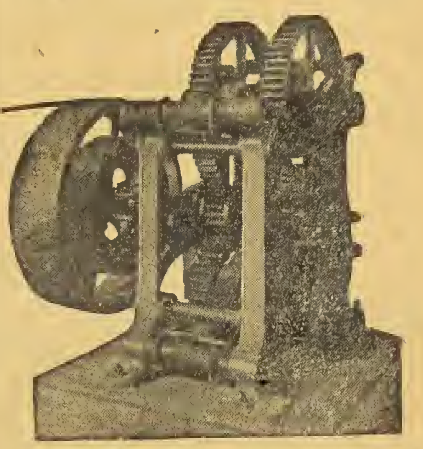
The excellent train service and equipment of the Salt Lake Route and great variety of routes offered affords opportunity for an enjoyable trip. Inquiries from prospective travelers will receive prompt attention from Agents or T. C. Peck, A. G. P. A., Los Angeles.

Well DRILLING & PROSPECTING MACHINES.

Fastest drillers known. Great money earners!

LOOMIS MACHINE CO., TIFFIN, OHIO.

The Pomona Pump



The New Pomona Pump is now being manufactured with machine cut gears and machine cut steel or bronze pinions. The pump fitted with this kind of gearing runs as smooth as a clock and there is absolutely no noise or vibration. The company have recently taken contracts for installing their largest sized pump with this class of gearing for the Artesian Belt Water Company of San Dimas, Western Water & Power Company of Glendora and other large irrigation companies. They are required to furnish these pumps with cylinders up to 12 inches in diameter and 72 stroke which has capacity of over 60 Miner's inches of water. The valves are made entirely of phosphor bronze with ground metal taper seats so there is very little obstructiin to the water in passing through them and it is impossible to clog them with sand. These, in connection with machine cut gears, in the pump head, make a strictly high grade pumping outfit and the best by a long ways of anything on the market today.

This head and valves are both protected by United States patent. Beware of infringing as both manfacturer and user are liable.

The company has recently installed one of their latest improved heads for the Santa Anita Land Company, a subdivision of the Baldwin Ranch. Below is what the owners have to say about it:

"The new 38 pump you installed for us on our tract on the E. J. (Lucky) Baldwin Ranch is giving us satisfaction in every way. We think we have the very best that money will buy. Both as regards to pump, material used and installation. We made an excellent change when we removed the pump we had been using and installed your make "

We have pleased these people and there is no reason why we cannot please you.

Send for catalog to

The Pomona Manufacturing Co.

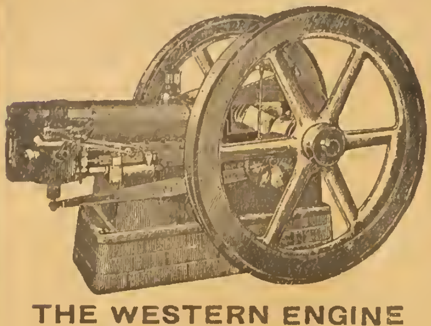
Pomona, California

IF PUMP YOU MUST

Why not pump at a profit?

Write A·T·Ames, Galt, Cal. for illustrated Catalogue

THE WESTERN GAS ENGINE



THE WESTERN ENGINE
Maximum Power at Minimum Cost

"From Factory Direct to User"

Designed and built by Western experts for Western use with Western fuel. In construction the Western embodies many original, yet practical ideas, which place it in advance of any other make on the market today. The simplest, strongest and best engine for

Irrigation, Power and Electric Plants.
Any Size from 5 to 500 H. P.

Burns cheapest fuel—gasoline, distillate or crude oil—with a saving of 20 to 40 per cent over any other style. **Send for Illustrated Catalogue** fully describing every detail of construction; tells **how** and **why** the Western excels all others; it gives the facts—the proof. Learn what Western engines are doing for others. Send your name today—ask for latest issue, A6.

WESTERN GAS ENGINE CO.
908-932 N. MAIN ST. LOS ANGELES, CAL.

RUBEROID ROOFING

The peer of all with 14 years' record for durability and efficiency.
Cheapest because best.

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MADE FROM CALIFORNIA REDWOOD OR SELECTED PUGET SOUND YELLOW FIR **WOOD PIPE** WOODWARD PATENT MACHINE BANDED PIPE
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A booklet, "The Whole Story About Wood Pipe," mailed free upon request

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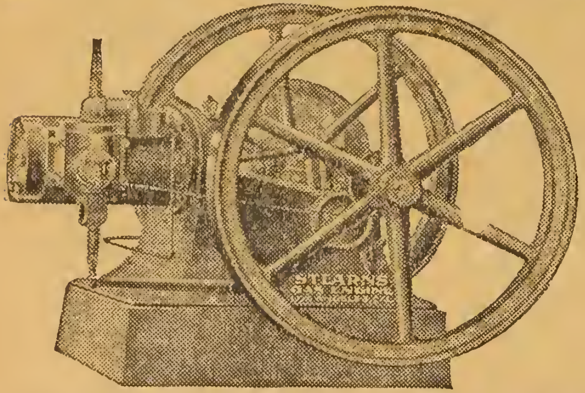

Has many points superior to any other engine.

Hundreds in Use

Every One Satisfactory

Built for California cheap fuel.

For further information, write

STEARNS GAS ENGINE WORKS 1001-3-5 NORTH MAIN STREET
LOS ANGELES, CALIFORNIA

NO, THIS IS NOT AN ARTESIAN WELL, BUT

AN IRRIGATION PUMPING SYSTEM
SUPPLIED BY
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POWER PLANTS, PUMPING MACHINERY AND WATER SUPPLY GOODS 212-214 S. Los Angeles St., Los Angeles, Cal.

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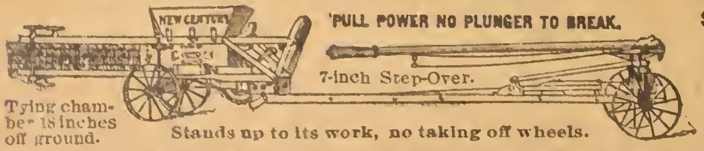
PULL POWER NO PLUNGER TO BREAK.
7-inch Step-Over.
Tying chamber 18 inches off ground.
Stands up to its work, no taking off wheels.

STRONGEST PRESS ON EARTH. ALL IRON AND STEEL.

So confident are we that you will buy the **New Century Press** that we make the above offer. No strings to it. You go to Los Angeles and see our press; buy it or any other of 12 factories shown in Los Angeles and we pay for your ticket for 300 miles and return. If you cannot go, write for our proposition to ship you a **New Century** for 10 days free trial. We ship direct from warehouse in Los Angeles. For full particulars address.

WESTERN STEEL & WIRE CO., 202 E. OSAGE AVENUE, KANSAS CITY, KANS.

Caustic Soda

60%, 70%, 74% 76%, 78%, 99%. Powdered and Solid. Full information cheerfully given. All goods guaranteed.

M. Bettman Co. **121 California St. San Francisco**

U. S. Carbolic Insecticide

Trade Mark **TREE WASH** Registered

To grow fruit profitably must become a study with the grower, and to raise it successfully he must be constantly watching and guarding against the pests that attack both fruit trees and vines.

This insecticide requires no heating or boiling of water, but is used simply by diluting with cold water, assimilating perfectly, requiring no agitation, forms no sediment, no clogging of nozzles, and will not injure the hands in the least, but will, like carbolic acid, heal and cure sores if on them. It is cheaper than any other preparation or method, considering the results obtained.

The best fertilizer to the trees. The one that leaves them clean and healthy. The one that brings results and pleases. The easiest prepared for spraying.

Information and testimonials on application to

W. P. FULLER & CO., San Francisco

Portland **Sacramento** **Stockton** **Oakland**
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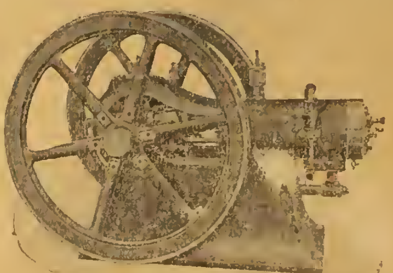
THE CALLAHAN DISTILLATE ENGINE



A first class Engine at a moderate price.

It is not how much you pay but what you get for your money.

Price Machinery is a good investment. Permanent installations always.

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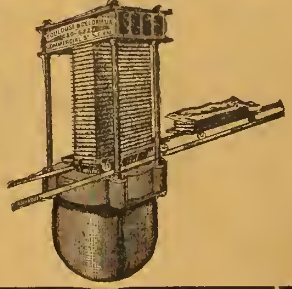
WINE AND OIL MACHINERY



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Complete Plants Fitted Out.

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Protect The Hens

To Raise Fine Birds

You must first of all provide comfortable quarters.

Profitable Egg Getting...

success in poultry business demands it. It is not necessary to invest a fortune in your poultry house. It is not necessary to build a heavy expensive poultry house.

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Rubber Sanded Roofing

Makes a Light Structure—solid, strong and absolutely weather-proof. That wear-proof surface of hard flint sand means years and years of extra wear without additional cost. Send for samples and prices.

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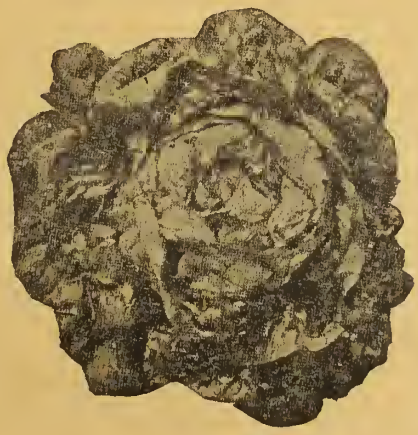
CALIFORNIA CULTIVATOR

DEVOTED TO AGRICULTURE IN ALL ITS BRANCHES

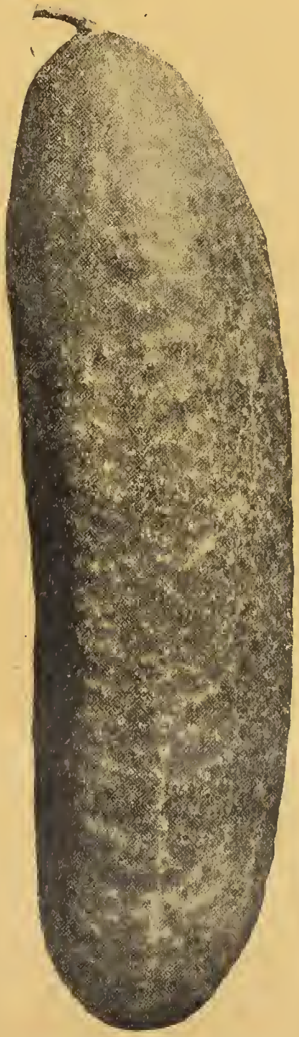
LOS ANGELES MAY 4, 1906 SAN FRANCISCO

Country Gentlemen



Silver Ball Lettuce

Eureka Cabbage



Forbhook Cucumber

THE FARMER'S VEGETABLE GARDEN

The economic benefit of home-grown vegetables has been most clearly discerned during the last few years and the result is a gratifying increase of interest in farm gardening. More vegetables have been grown recently on California farms than ever before. The low market values of some of our most important special products have given an impetus to diversification of crops which a century of exhortation could not have compassed. California farmers have recognized as never before that sound farm policy generally requires the home production of most food supplies.

KATE'S SORE SHOULDER.

Kate was a faithful old horse, always ready to do her day's work on the farm; then, besides, if Aunt Molly wanted to go anywhere Kate was always harnessed up because she could be trusted. She kept fat until last spring. There was a lot of muddy weather in seeding time and Kate's shoulder got sore and she began running down fast.

Uncle Stephen was very busy and neglected the sore, mistaking Kate's willingness for a sign that the sore was not painful. One night he came to the kitchen door plainly worried and told Aunt Molly that he wanted some soap and water for Kate's sore shoulder. Aunt Molly was all sympathy, but she said: "Soap and water is the worst thing you can use. Haven't you got some Gall Cure? Father never would be without it."

But Uncle Stephen didn't like to be reminded about how Aunt Molly's father farmed and so he persisted in his soap and water.

Meanwhile Kate's sore shoulder was raw and the patient horse was getting distressed and poor.

Aunt Molly was a wise woman. She said no more about the Gall Cure, but that night she darned Uncle Stephen's stocking with a hard ridge on the heels. Next evening Uncle Stephen limped to the house nursing big water blisters on both heels.

"Try soap and water," suggested Aunt Molly. Uncle Stephen said nothing, but that very night he sent the hired man to town for a box of Security Gall Cure, and Kate's sore shoulder was well in a few days and she did her full share of work all the time.

IF A GIRL KISSED YOU.

Tom—"If a girl whom you liked, kissed you, would you kiss her back?"

Tim—"Of course."

Tom—"Well, I wouldn't; I should kiss her face."—Woman's Home Companion.

A nice uniform flock of hens roaming around the yards adds a great deal of pleasure to farm life, and will have a tendency to make everybody, young as well as old, on the farm more interested in the poultry business.

A Letter from J. M. Bull at King City, Cal.

J. M. BULL.

IS THERE ANYTHING IN POULTRY?

There are some that say: "There is nothing in poultry." Why, I knew a man, who two years ago was broke, and lost his home, but, today, he is one of the wealthiest men in King City. That is Nick Bray, with 900 of the prettiest Brown Leghorns in California. He ordered $74.00 worth of Coulson's Feeds from the carload I sold at King City.

$300.00 FOR FEED—$900.00 WORTH OF EGGS.

During the past year, (1905), Mr. J. Christensen, of San Luis Obispo, Cal., fed his flock of 300 laying hens on COULSON'S MASH EGG FOOD, every day, and the total cost of all feed used, during the year, was $300.00. He sold during the year $900.00 worth of eggs, making $600.00 profit.

5 WEEKS' OLD CHICKS—3½ CENTS EACH.

Mr. Christensen hatched out 312 chicks, and he fed them entirely on COULSON'S GROWING CHICK FOOD, dampened with a little milk.

He purchased 5 sacks of it, for which he paid $11.75. When the chicks were 5 weeks of age, he had 310 good, strong, healthy chicks, only two having died; and out of the 5 sacks of feed, he still had a bucketful left. So the cost of feeding them COULSON'S GROWING CHICK FOOD up to 5 weeks of age, was about 3½ cents per chick, and raised 310 out of 312.

WHY YOU SHOULD FEED COULSON'S FEED.

Eight pounds of COULSON'S MASH EGG FOOD makes a meal for a hundred hens, and it takes nearly twice that amount of inferior feed, such as bran, shorts, chop feed, etc., which do not contain nearly so much protein.

"Can feed 1500 hens—**'COULSON'S'**—FOR LESS MONEY than what it costs to feed only 1100 hens on the other feed."

For instance: Mrs. Marks, at Salinas, fed 1500 hens all last year on COULSON'S EGG FOOD and it did not cost her as much as it did to feed 1100 hens the year before on common feed. That was proof that **"COULSON'S"** goes the farthest; therefore, is the cheapest. She now buys COULSON'S MASH EGG FOOD in one-half ton lots, about every two weeks. She gets it at Mr. F. Blackie's store at Salinas.

The COULSON'S Feed is so much richer, and a more solid feed, so that the hens cannot eat nearly so much of it. All the poultrymen know this—those who have fed it. The hens NEED the rich feed and if they are fed COULSON'S, they do not eat so much of the other feeds, so that is the **SAVING.**

Then, if you get only two eggs extra a month, that would pay for COULSON'S FEED, and from the other cheaper feeds, you would not get enough eggs to pay for the feed. You know a cow gives more milk and richer, when fed on a good, mash feed; so does a hen make more eggs, when fed on the right kind of feed that **HELPS TO PRODUCE THE EGG.**

Some poultrymen are mixing cheap Blood Meal, that is half tanbark, to make Egg Food, which they can readily see if they will only LOOK at it. It costs 4 cents a month to feed a hen COULSON'S MASH EGG FOOD and it also costs 4 cents a month to feed the cheaper feeds, as you have to feed so much more of them.

Then, two eggs extra would pay for COULSON'S FEED, and many months afterwards, you will be realizing the advantage of feeding **COULSON'S** Feed, for you will be getting so many more eggs in the late Fall, when eggs are worth 50 cents a dozen.

OVER $100.00 IN 3 WEEKS FROM 350 HENS.

Last November, when I was at Hanford. I saw a good illustration: One poultryman with 300 hens did not feed any of Coulson's Feed—he was then getting only 4 eggs a day.

Mr. V. E. Hill, another poultryman, had 350 hens and feeds **COULSON'S** EVERY DAY, the year round, and at that time eggs were bringing 53 cents a dozen at Berkeley and San Francisco and Mr. Hill sold $117.30 worth of eggs in three weeks, and there are four and a half weeks to each month. So you can see that the man who feeds COULSON'S FEEDS, makes a whole lot more money during the year.

IT'S THE SUCCESSFUL POULTRYMEN WHO USE COULSON'S FEEDS.

Men like Mr. Freeman, with 5000 hens, and all of his brothers, making from $2000.00 to $5000.00 a year, are men of from fifteen to twenty years experience, and only buy goods from which they will get good results. They buy carloads of COULSON'S EGG FOOD.

Mr. De Rezendes, who feeds nearly four carloads a year of Coulson's Feeds, made enough money by it, to enable him to buy another large ranch of 300 acres, which he will also stock up with thousands of chickens and will feed them on Coulson's Feeds. He buys COULSON'S SPECIAL DRY CHICK FOOD by the wagon load, three tons at a time, and the EGG FOOD, 300 sacks at a time.

Also Mr. Gaston, with 3500 hens, has fed 3000 bags of COULSON'S Egg Food during the past three and a half years, and uses tons of COULSON'S SPECIAL DRY CHICK FOOD every Spring. See illustration. Their word is worth as much, or more than that of the many smaller men in the business.

OVER $1000.00 WORTH OF EGGS FROM 400 HENS.

Mr. Selecman, a farmer, who owns a large wheat ranch near Elmira, Cal. started to feed his hens COULSON'S EGG FOOD two years ago. According to a careful record kept during the year 1905, he sold $1146.15 worth of eggs from a flock of 400 hens; and after paying for all feed, including some $200.00 worth of COULSON'S EGG FOOD, he cleared a profit from these hens of nearly $700.00.

$4.00 A HEN.

Why, Henry Graff, who was elected president of the Pacific Coast Poultry Association, and who has 2000 fine White Leghorn hens, feeds COULSON'S MASH EGG FOOD every day, and the last year his hens laid nearly $8000.00 worth of eggs, or about $4.00 per hen.

The Coulson Co. has over 80 carload agencies in California, handling the feed in carload lots, and hundreds of stores handling the poultry foods in smaller quantities. This is proof that thousands of poultrymen are feeding Coulson's Feeds and you should be feeding them too.

INTELLIGENT MEN, that's the kind that feed their chickens COULSON'S FEED and make money.

Geo. W. Gaston's mammoth poultry farm eight miles from Petaluma, Cal. Here is the section of the country where the world's largest poultry farms are located. Here we see poultry farms that are a mile square and covered with poultry houses, occupied by thousands and thousands of chickens. The laying hens on the above place have been fed on COULSON'S MASH EGG FOOD once a day for THE PAST FOUR YEARS, and during this time, Mr. Gaston has purchased for these hens, more than **3000 bags** of Coulson's Egg Food; besides tons and tons of Coulson's Chick Food for the little chicks.

35c per hen PER YEAR is what it cost Mr. Gaston to feed them every day on Coulson's Mash Egg Food; $1.10 per hen including all grain, etc. Mr. Gaston is a practical and experienced poultryman, having raised poultry for the last twenty-five years. He is the owner of the above ranch, besides interest in other farms. The fact that Mr. Gaston uses Coulson's Mash Egg Food exclusively for his hens with such good results, speaks well for the merits of Coulson's Feed. Mr. Gaston is now raising 6000 little chicks on Coulson's Special Dry Chick Feed.

ASK YOUR DEALER OR WRITE TO

COULSON POULTRY & STOCK FOOD CO., PETALUMA, CALIFORNIA

CALIFORNIA CULTIVATOR

Vol. XXVI—No. 18 LOS ANGELES, CAL., FRIDAY, MAY 4, 1906 Subscription $1.00 a Year

Good Roads in California--How Best Made

By the Editor

The good roads problem in California is much more easily solved than in most of the states of the Middle West. Our soil is largely composed of decomposed granite; it is easy to work at certain seasons of the year, and exceedingly difficult to handle at others. Until within the past few years we have depended for our thoroughfares upon the old state roads made by the early padres; we have, therefore, not given the attention we should to the character of our soils which enter into the manufacture of good roads.

Today the question which appeals to us is, how can we adapt our soil to our roads to best advantage at the least cost to us.

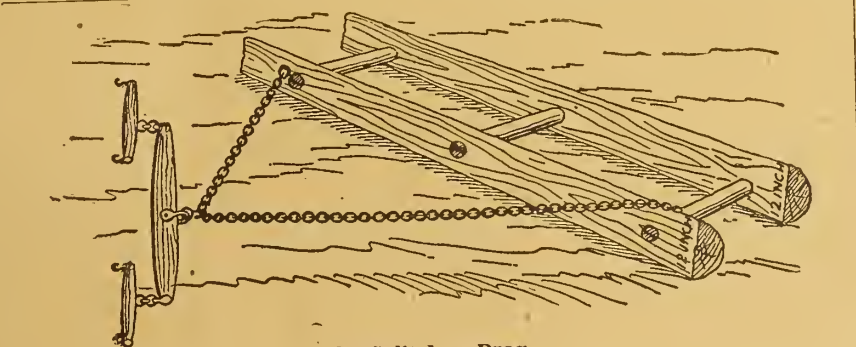
Experience has taught us that our roads cost more than our taxes and that more than one-third of the money we expend on our roads is simply thrown away. The roads are not made right to begin with, and they are not maintained after they are supposed to be completed. Road making is not a very difficult science; it requires study of the different soils to be used and how to use them, and it requires the application of common sense to the few known principles which form the basis of ordinary country road making. In general terms the principles we refer to may be applied as follows: (1) Economy; building at the least cost to the county or the district. (2) Completeness; building the road convex and leaving it smooth. (3) Capping the surface with dirt which forms the hardest, most resistant base on which to haul heavy loads without producing ruts or holes. (4) Yearly attention; going over the road once a month during the wet season to keep it in repair to withstand the strain upon it during the time no rain falls on it.

Heretofore, our Supervisors seemed to hold only one thought in mind; to do the work required for the present without regard to future results. This is false economy and a waste of the people's money. It has left us a system, or lack of system, of the worst kind; one which has given California the most abominable thoroughfares, as a general proposition, to be found north of Mason's and Dixon's line. But public sentiment is being awakened on this subject and the dawn of a better day is coming for our public roads in this State.

At a most interesting session of a Farmers' Institute held at Covina, recently, Mr. J. H. Reed, of Riverside, made the statement, in effect, that that city had expended $60,000 on its roads. That seems a large sum, but when you travel over the Riverside roads you readily see where the money has gone and you appreciate its value in price at which real estate is held on lands adjacent to these roads. Other communities are expending large sums on their highways and the interest is growing.

One of the first things to consider in road building is expense. Under the old way of making and repairing our roads we paid enormous sums and yet got very little; under the modern system we pay out little and get a great deal. That's the difference. In the cut which appears on this page this statement is verified. The split log drag is the modern farmer's road grader, road evener and road smoother, and the simplicity of the invention is what makes it so valuable. Now as to its simplicity. The cut when examined with a little care, will show how it is constructed. Generally it is constructed of a log, or telephone pole, 8 to 12 inches through, sawed in the middle, and from seven to ten feet in length, according to the strength of the team to be used in handling it. Bore three two-inch holes through each half in such a manner that the rear half, when set on edge, will stand 16 inches to the left of the front half, when set on edge as shown in the figure. Bore three two-inch holes in each slab, as shown in drawing; connect the slabs, facing the same direction, with three stakes or rounded 3x3's long enough to leave three feet space between the slabs after the connecting pieces have been driven into the holes and the edges wedged. Two or three planks can be nailed to these cross pieces, affording a place for the driver to stand, and, at the same time, strengthening the drag. Use a chain or strong rope for attachment to the doubletree. Supposing the drag to face west, and assuming that a chain is used, fasten one end of the chain to or around the left hand outside connecting brace, letting the chain pass over the top of the slab. If attached to the face of the slab near the left hand end, the chain would interfere with the movement of the dirt toward the end of the drag. The drag is run at an angle of about 45 degrees, so that dirt can be thrown toward one side. The other end of the chain must be fastened to the face of the front slab near where the righthand connecting piece comes through. The cut presented is an earlier type of the drag and does not show the logs arranged just in the exact position they should be. Still, that is not a very material point in the description. The drag does its work well. Shoe about three feet of the bottom edge (righthand side) of the front slab with a piece of iron or steel of the right length, about three inches wide and a half inch thick, with one edge sharp or beveled. Put it on securely, letting the sharp edge project about half an inch below the edge of the slab. This shoe will enable the drag better to shave the surface and cut down hard ridges which are usually met with on roads that have not been kept smooth.

The drag is now complete and does not have a nail or bolt in it except to hold the shoe on, and will cost from $3.50 to $5.00 and will last from five to seven years, depending on the frequency of use. A very satisfactory addition to the drag as described is made by taking a large iron ring made of 3-8 inch iron and have a blacksmith heat and draw one side of it into an extension which will fit over the links of the chain so as to hold position without slipping. The two halves of the log which make the drag should be thirty inches apart when the drag is complete, and if this looks too wide, it will be better to set it two inches wider. Many drags are rendered failures because the logs are set so close together that they do not clear themselves of mud.



The Split-Log Drag.

The split log drag possesses one important advantage. It kills the weeds on the side of the road. Used after rains—not when the roads are muddy—it will break down the weeds and so change the face of the road that it will not permit the seeds to germinate. This was the experience of the writer who used it in Iowa where the weeds were one of the most difficult propositions in road making and repairing the farmers had to overcome. The split log drag, if worked toward the center of the street will produce a convex surface and by using it once a month during both wet and dry seasons will give a smooth, hard surface, although not free from dust, of course—nothing will but oil, or the sprinkler, will abate the dust nuisance.

It should be remembered that the split log drag should be used after rains, when the ground is soft, but not sticky, for then it will add an additional layer of earth to the surface and at the same time fill any chuck holes which appear.

If it is desired to widen the road it is best to plow a very light furrow on the mark left by the righthand end of the drag as it has passed to and fro and then, with the drag spread the loose earth over the surface of the road so that the passing teams may pack it hard. This can be continued indefinitely until the road has reached the desired width.

Mr. King, the ardent advocate of the split log drag dissuades the use of the road grader preceding the drag, but this depends on conditions. If the roads are to be made up, after being allowed to go to pieces, a road grader is just the thing to do the preliminary work, for it leaves the dirt where the grader can catch it and renders valuable assistance in depositing it in the chuck holes—which the grader then makes smooth. But as a general proposition we believe that with the split log drag better work can be done on the dirt roads than is possible with a grader. The grader itself requires the strength of at least one team to pull it on good roads when it is running empty. The grader will deposit a large mass of soft earth in the middle of the road just where it is not wanted and just where it will collect a large amount of moisture with each succeeding rain. The purpose of the split log drag is to maintain the hardness of the surface under all conditions of weather.

There is no reason why our people should dally along with the abominable roads which are a continual menace to teams, harness and vehicles, let alone the good nature of the farmers. If the farmers' work is of such a nature that he can not drag his road on proper occasions, he can go into a pool with his neighbors and by chipping in a little money employ someone who will make it his business to drag the roads for a certain distance when the time is most opportune. Any sensible half-grown boy can operate the drag and do it as good as a man, when once he is shown how. Don't wait for any further urging; make a drag now. Get ready to use it at once and don't feel discouraged if it takes some little time to get a perfect road. Keep at it and our experience will be yours. You will get what you work for and be glad.

It is reported that the Supreme Court of California will establish its headquarters in Sacramento.

Deciduous Fruit Culture

BY J. W. MILLS, POMONA, CAL.

KEEPING APPLES

The Country Gentleman relates how to keep apples successfully over winter. It says that the storage room must be cold to prevent rot damp, to prevent wilting, and dark to prevent ripening. Cellars which have water on the floors from September to June are considered best for apples. In the fall the cellar windows should be left open on cool nights and not closed permanently till there is danger of freezing. A cellar temperature of about 30 degrees is advocated.

* * *

PRUNING PEACHES

The Massachusetts station made some experiments in pruning peach trees, leaving one row for nine years without pruning. The effect was as might have been expected, leaving the lower part of the main branches bare with the fruit wood weak and high up in the trees. The trees were less vigorous and thrifty than pruned trees of the same varieties. A row of trees next to them was pruned in the usual way which made them healthier and more vigorous trees and they withstood the cold winter much better. The most interesting feature of the experiment was that late spring prunings gave better results. This is what we have advocated for California where possible.

* * *

BUD VARIATION

The Country Gentleman cites examples of bud variation in Winesap apples and some other fruits including the strawberry and emphasizes the advisability of using buds from only tried specimens of plant for propagation. This caution cannot be too frequently published and the Cultivator has never lost an opportunity to do it. Still perhaps 99 per cent of the persons who purchase fruit trees take anything as long as the variety is guaranteed.

I wonder what the proportionate increase in the valuation of the orchards of this country would be if it were taught in the public schools that this is one of the vital principles in horticulture and agriculture?

Suppose that Tom learned at school that part of the 100 Seller's Cling peach trees that his father bought might have been propagated from a tree that was known to be a shy bearer or the parent tree might have been one of those trees that seem to be a "little off," for it was known that the nurseryman who propagated the trees which Tom's father bought got his bud from Mr. Brown's orchard in which were several of those kind of trees, but the nurseryman did not know about it. What would Tom's father think about the possibility of having to care for some trees for a long term of years, some of which might not give him near as much in return as some other in his orchard, when with a little forethought he might have had them all alike and good? On the other hand, the teacher had mentioned that in getting his facts together he had learned that Willie Smith's father had bought some trees which were propagated from a tree in Mr. Work's orchard which was noted for its abundance of fine fruit. Tom had told his father about this and got his father so much interested in the case that he set out to find out what he could about it. Is there any doubt but what an intelligent man would do this? Would not Tom and the other boys remember the lesson when they grew up and were planning to grow some fruit of their own?

Some sort of an agricultural or horticultural society would be of immense value in disseminating this kind of knowledge, but the school would get at the foundation of the population and would give the facts to the largest possible number. The work need not take more than parts of a few days in a month and would constitute one of the most fascinating branches of nature study. It would be practical to the highest degree as it would be directly in the line of refining the chief industry of the whole human race.

ORCHARD FERTILIZING

"By practical experience I will say that after five years of test I found the use of commercial fertilizers to pay. No one in this age can expect soil to stand the strain that our high cultivation draws from it.

"Take, for example, our prune orchard, by use of fertilizers, bearing in 1902 thirteen tons of green prunes per acre; peaches the same. Many will ask what size was obtianed. They were larger than those in orchards bearing three tons to the acre, and many of the three-ton not being packed at all.

"Take the average orchards bearing five-ton green prunes per acre, and use fertilizers. If you only increase the size say 50 to 60, or $10 per ton dried, allowing two to one in drying, we have $25 for increase per acre Cost of fertilizer and applying on orchard, $6 per acre, leaving a profit of $19 per acre.

"This is not allowing anything for increase of tonnage per acre, which I think can be safely put at one-third, or in round numbers, say the orchard that produced five tons without fertilizers will produce seven tons with fertilizers, making an increase in size of fruit and increase in tonnage $35 per acre, or a net profit of $29 per acre.

"Then, again, we must not lose sight of the fact that we are keeping our trees in a sound, healthy condition, thus making them less liable to be attacked by insects and fungus growths.

"In closing, I would say that experience has taught that no man can afford to drain the soil and not return some of the profits taken from it; that commercial fertilizer is the cheapest and best, for you only pay for that part your trees and fruit are in need of."—B. F. Knapp at Mountain View Institute.

RESISTANT VINEYARD

The grape growers of Santa Clara Valley have been for some years experimenting with various kinds of vines, striving to find out what variety is best suited to the different parts of the valley, and to discover some kinds that will resist the phylloxera. They have had but indifferent success. One of the enthusiastic growers has recently taken a trip to Martinez for the sole and express purpose of studying the methods of the growers in that part of the State, who have had remarkable success. This man, George A. Muirson, a grape grower, was interviewed on the results of his visit, and gave his observations freely, believing, as he did, that a great many vneyardists and fruit growers would be interested and profited thereby. John Swett, whom he called upon, is president of the Viticultural Society of California.

"Having a desire to see a resistant vineyard of some magnitude where the grapes were almost ready for market," said Mr. Muirson, "I visited Hill Girc Vineyard, near Martinez, California, the property of John Swett & Son. It is beautifully located in the Alhambra Valley and adjoining foothills, and consists of upwards of one hundred acres, about eighty of which are planted in vines, all of which are on resistant roots.

"The Rupestris St. George stock is mainly used and gives the best satisfaction in general . For ground that is in any way obstinate, other stocks, such as the Riparia, Rupestris Martin and Solonis, etc., are used. Where black oak has grown the ground proves very refractory and Riparia Rupestris 3306 is found to succeed where the other stocks fail.

"This vineyard was reconstructed on the same ground which, until eight years ago, had borne the vinifera until the phylloxera had compeltely destroyed it, and in this particular it was gratifying to behold the effects of the beautiful vineyard, re-established on resistant roots. From one end of the vineyard to the other the vines were, with rarely an exception, perfect in vigor, leaf and fruitage. Some bearing at one, two. three and four years of age; and. as I was informed, larger crops than the same varieties bore on their own original roots. It was indeed tempting to see and taste the luscious muscats, sultanas, cornichons, tokays, etc.

A telephone connecting most of the farmers of any locality is a benefit to certain business men in the town where "central" is located, but to others it is not. There is a good deal of selling and buying done over a telephone line, and dealers in town do not get a hand in. This is especially true of grain and seeds.

Tree Protectors

75c per 100. $5 per 1000.

As valuable in summer against sun-scald, hot winds, etc., as they are in winter against cold and rabbits. Recommended by all leading orchardists and horticultural societies.

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Of Interest to Fruit Growers

Sometimes it pays to take the first market. Sometimes it pays to wait until your fruit is dried. I will furnish free to all producers of Dried Fruits a compilation of the stocks of Dried Fruit in all the largest cities in Europe and the United States. After seeing this report you will know when to sell and at what price. My estimates were correct in 1904, when prunes sold at 1 3-8 bag basis. I estimate apricot and peach prices. Contracts made by or through me will be safe. I never have had a draft rejected or unpaid. Reference: American National Bank, and Bank of California, San Francisco.

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Practical Farm Science

OUR FARM BIRDS

Any bird that eats the codlin moth must, of course, be regarded as an ally, and this useful work is done by the Black-Headed Grossbeak and the Bullock Oriole.

Hardly less valuable is the quail, whose favorite diet is the potato bug, the cotton boll weevil and various noxious worms.

The linnet is not wholly blameless. He certainly eats a good deal of fruit, but he substantially varies his diet with large numbers of seeds of noxious plants and weeds and, on the whole, he does more good than harm.

The same may be said of the blackbird, who has a decided taste in fruit, but who prefers worms and insects. This is shown by the assiduity with which he follows the plowman. It may therefore be said that he gives good value for what he takes in the way of fruit.

The bushtits, the kinglets and the Audubon warblers feed almost entirely on insects that are prejudicial to fruit. They must therefore be considered as friends.

The California jay is a criminal with a bad record, and the Washington authorities believe that in some places they are too numerous.

From this valuable report it is evident that bird life in California has been treated with some injustice. Evil is usually more conspicuous than good, and while the farmer is painfully conscious of injury to his fruit it is not so easy to recognize the unobtrusive work that is done in devouring insects and seeds that would otherwise prove to be far more serious enemies.

The report concludes with the admirable opinion that the birds of California are too precious to destroy without great cause, and that under no circumstances ought this to be done without a thorough knowledge of their habits. Even where they are obviously mischevious it may be due to some special and temporary cause, such as a shortage of their own particular food.

CALIFORNIA A GREAT STATE.

The following is an extract from an address delivered in Italy by Signor des Planches, Italian Ambassador to the United States, after his visit to California:

"From whatever point of view one looks upon California, first famous as a land of gold, and afterwards a great center of agriculture, it is at this time a country whose prosperity far exceeds anything that could have been expected when people were unacquainted with its resources. It is today a land whose prospects are still far more encouraging than at any time in its history.

"With a rich and fertile soil, its mild climate, and room enough for many times its present population to live in comfort , it is certain that California will in time develop into a splendid social, agricultural and commercial world center. Although this great State has already achieved a great industrial importance, when one considers the wealth of motive power that will be soon developed by harnessing all her hydraulic resources, the industrial future of California is great indeed, and I may say also that she will become a social, civil, artistic and literary world center. Already California has two great universities that are without a peer—Berkeley and Stanford—from whence have come some of the best writers in the United States, and of whom the entire United States is proud indeed. California boasts of better school facilities in proportion to her population than any state in America.

"Considering all these things, what has already been accomplished and the still greater future progress that awaits this land of inevitable resources, there is no doubt that those who go there in time and find their way to enjoyable conditions will naturally progress apace with the gradual development of the country. This is the natural outcome of the course of events, particularly where there is intelligence coupled with indomitable energy and push. The long distances which people formerly went to come to California have exercised a selective influence and brought only the best people to the Golden State, while methods of rapid transportation have shortened her distance from every part of the world.

"California is no longer what it was fifty years ago—an isolated commonwealth, further removed from the world's centers than is South Africa today. A magic change was wrought in the history of the Golden State when the first transcontinental roads were open to traffic. It can be said, furthermore, that California can now be reached in ten days from Europe and about eighteen days from Asia."

IRRIGATION IN THE WEST

We are not accustomed to think of the United States as an arid country, and it is hard to realize that one-third of our area has insufficient rainfall for the proper culture of crops. Nearly one hundred million dollars have been spent in an effort to remedy this deficiency of nature; and if the length of all the irrigation canals and ditches in the United States were taken together, the mileage would encircle the earth more than twice. Some ten million acres of land were under irrigation when the Census Bureau made its report in 1902, and since that time at least half a million more acres have been added. Over one hundred and thirty thousand farms have been benefited in this way, and the total outlay has averaged $10 per acre. The irrigated area is increasing steadily; during the three years previous to the Census statement, it was extended 30 per cent. It is becoming every year more costly to obtain water, because in most of the States the easily accessible supplies have already been utilized; and it now requires more labor, and consequently more expense to reach it.

The Western States, of course, have received the greatest advantage from this work, Colorado and California each having about one and three-quarter million acres of land artificially supplied with water, but many States in the East and South have applied the system for the growing of vegetables, oranges, tobacco, hay, etc.

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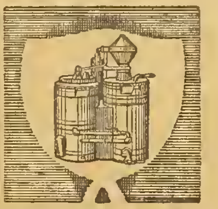

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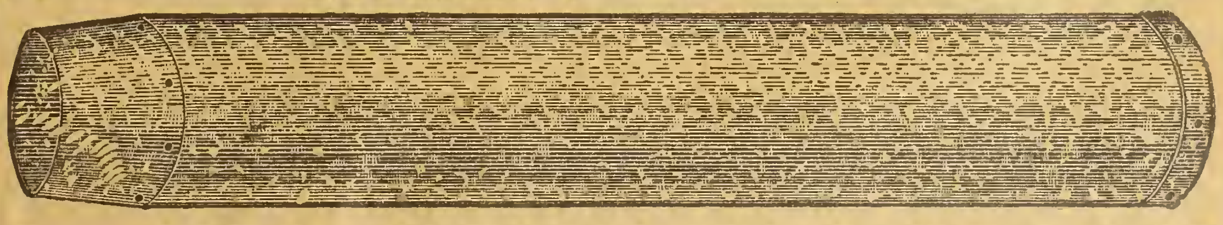

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California Horticulturally

BY JOHN ISAAC, SACRAMENTO, CAL.

FRUIT CONDITIONS FAVORABLE.

As we have stated before, there is always a tendency in the early fruit season to indulge in doleful forebodings. In all our California experience, there has been hardly a season in which early climatic conditions—rains, winds or frost—have not done some damage, and which have not given rise to assertions that the entire fruit crop was destroyed, yet there has never been a season when the results have borne out the prediction. This season has been no exception, yet as the season advances, and we are able to get the facts, we find that there will in all probability be a good fruit season after all. Cherries, as a rule, are yielding very heavily and small shipments have already commenced to arrive from the Vacaville district. Apricots, there is no hope for; they are a failure. Peaches will give a fair crop in the State. Some of the earlier blooming varieties, as the Phillips Cling, will be very light, but on the whole the crop will at least equal that of last season. The blight which has appeared for the first time this season, or at least has become conspicuous, is doing much damage to the new growth of peaches. Prunes so far promise well. Pears are setting well, and will be a good crop except as the blight has affected them. Almonds are somewhat spotted, but will be a light crop on the whole.

* * *

PEACH BLIGHT SPREADING.

Reports come in from all sections to the effect that the peach trees are blighting badly ,and as a rule the disease is a new one to most people, having been unnoticed heretofore. Orchards all over the State are suffering from its attack, and it has broken out in a more virulent form this season than ever before known. As the disease is a fungoid, either the shot-hole fungus, or closely allied thereto, it is probable that weather conditions have much to do with its rapid and extensive spread this season. As before recommended in these columns, orchardists whose trees are attacked by this disease should spray with the Bordeaux mixture as soon as possible after the trees become dormant in the fall. The object being to destroy the germs of the new fungus crop before they have had an opportunity to get a foothold.

* * *

HORTICULTURAL INSECTARY DAMAGED.

The effect of the late terrible catastrophe in San Francisco will be more far reaching than it is possible to realize. Even the orchardists of the State will feel the effect of it in loss suffered by the Horticultural Commission. The insectary, at which all beneficial insects have been bred from which they have been distributed to all parts of the State, was situated in the Ferry Building and while this structure has been spared from fire, it was so badly shaken by the earthquake that not an office escaped. The walls of the insectary were shaken down, the cases in which the beneficial insects are bred were crushed into kindling wood, and the whole buried beneath a heap of rubbish. Efforts were at once made to rescue all the stock possible from the ruins, but the losses have still been great and it will take some time to repair them and get the office in working order again. In the meantime there will be much delay in getting beneficial insects for distribution.

* * *

REMOVING LARGE TREES.

In making the alterations to the Capitol building it became necessary to remove a number of large trees and bushes which were in the way. The matter of handling these so that they should not suffer from the operation was a difficult one, especially as they were making their first spring growth at the time and were in their most tender condition. The work devolved upon State Gardener John Reeves, and his success in the matter entitles him to commendation for his skill and care. Very many of these trees were valuable, and some of them rare, yet all have been moved to new stations and although the operation took place several weeks ago they are still growing and have not lost a leaf, in fact they do not realize that they have been moved. In their removal a large trench was dug around them far enough removed from the roots to insure that they should not be interfered with. A heavy box was then built around then and the bottom worked under each tree, so that the entire root system of the tree remained undisturbed in the original soil. They were then removed with a block and tackle and as carefully established in their new locations. It required a great deal of skill and labor, but the trees were worth it all.

* * *

DANGER FROM IMPORTED PEACH STOCK.

There has been so great a demand for peach stock for planting in this State for several years past that our nurserymen are starting a large quantity of this stock in order to supply the increasing demand for it. There have been very large shipments of this stock from Eastern nurseries, which is to be regretted for two reasons; first, there are many peach diseases in parts of the East which have never yet appeared in California, and while every effort has been made to prevent the entry of any of these, there is still a possibility in spite of the greatest care, of introducing some undesirable disease when such large quantities of stock are imported. Every effort has been made to ascertain from what section such stock is imported, and if within an affected area, it has been stopped, so that the danger of importing disease or pests has been brought to the lowest point. Secondly, of course it is better to produce our own stock than to import it. This, however, is a small consideration as compared with the danger of importing new pests and diseases, which may play havoc with one of our greatest fruit industries. The dangers principally to be feared in peaches are Yellows, Rosette, Littles, and the Eastern Peach Root Borer. We have none of these pests in our State at the present time, and they are certainly very serious in the sections of the East where they are established, rendering peach growing in some places impracticable and unprofitable.

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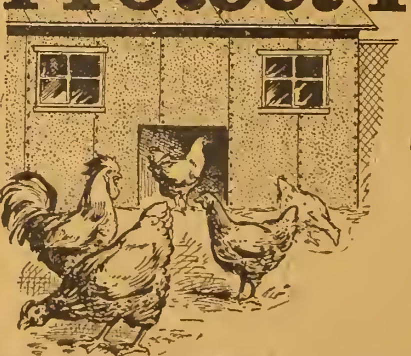

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With the Citrus Growers

BY J. W. MILLS

POSSIBLE COMPETITION.

There is a always a consciousness with a large part of our citrus fruit growers that the tropical fruit-growing sections within shipping distance of the Atlantic seaboard will cut into the orange market of California and Florida. This is but natural, and is sure to follow in some form or other. It may perhaps be oranges that will come in, and there are sure to be different varieties of fruit that will have a certain influence on the orange market. The apple crop of the East acts as a sort of barometer, barring other conditions, in indicating the possible demand for our oranges. When there is a large crop of apples in the Eastern States and that fruit is cheap, people will use apples instead, partly because they are cheaper than oranges and partly from choice. When oranges have been used freely for awhile, apples are a pleasant change, and when apples are available at reasonable prices they are in greater demand than oranges. The same may be said of various other deciduous fruits, but with the exception of pears, such fruits have not been available, but now comes some South American statistics that show an awakening in fruit culture that few of us are aware of.

The Argentine Republic now has 200,000 acres planted to fruit trees and 120,000 acres in grape vines, 320,000 acres in all. The industry has reached a point where export trade is being worked up. They harvest their fruits during our winter season, and should they run their peaches, plums and grapes into our orange markets in competition, there would certainly be some influence exerted that would affect our prices. This may not happen for some time, but it is one of the possibilities. Water transportation is cheap, and science has come to the aid of the shipper till now it is possible to ship perishable fruit half way around the world and land it in good condition. Argentine is only a small fraction of South America that is adapted to deciduous fruit culture.

Of the different fruits grown in the country referred to, not counting grapes, 40 per cent are peaches, 20 per cent citrus fruits, apples and figs 10 per cent each, pears, plums and quinces 5 per cent each, nuts, cherries and all other fruits, 5 per cent. Peaches and plums do particularly well, especially plums. Apples and pears have not assumed an important place. Bartlett pears, in addition to our Eastern apples, put on the market in February and March, would no doubt have a depressing effect on our orange trade.

Quite recently a European horticulturist made a tour of the United States for the purpose of investigating American methods of horticulture, and paid particular attention to California methods, especially irrigation. He was on his way to Uruguay to take charge of a large body of land for a French company which was preparing to engage in fruit culture. We were told that this land and the climate that went with it had been proven a desirable fruit growing section.

We need usually have no fear of large fruit growing corporations revolutionizing the fruit growing industry, but they usually work out some important problems directly or indirectly. They prove that something is doing in their line; or else they would not be attracted. At any rate they are straws which show us the way the wind blows.

BARNYARD MANURE AGAIN.

One of the features of the knowledge of use of fertilizers that has puzzled many an amateur orange grower, came to our notice some time ago when a prominent Riverside grower related his experience in the search for fertilizer knowledge. He said there was but one thing that all Riverside growers whom he consulted agreed upon, and that was that barnyard manure was not good to use on orange trees; it made the fruit coarse. Now, this man has found that he cannot make his fruit coarse on his soil after applying ten cubic feet to the tree for several years, but has succeeded in materially increasing the yield. He is not alone in his views now, however, as growers are all flocking back to stable manure.

Now comes the report that one of the English stations has come to the conclusion that barnyard manure is more valuable than commercial fertilizers, but both were good. When potash was left out of the commercial, the effect of the commercial fertilizer was obliterated in most soils. Ten tons per acre of barnyard manure supplied sufficient potash to make up the deficiency.

CLOSE VS. WIDE SETTING OF ORANGES.

Many have expressed the belief that our orange groves are set too close, and while no harm comes from this source while the trees are small the time will soon come when some change must be resorted to in order to give the trees more room. For an orange tree if properly cared for and given plenty of room is of great longevity.

The belief that our groves are too closely set goes along with the idea that an orange tree should not be pruned; and in case they are not pruned they should surely be given more room in which to grow· for if allowed to they will grow to a large size, some of them attaining the width of 40 feet and retaining all their luster and glossy foliage and bear their annual crops as in their early vigor. Indeed youth appears never to end with an orange tree if properly treated. It logically follows that there are two methods, one of wide setting with little or no pruning, except removing dead limbs. The other of close setting, say 22 to 24 feet each way, to be followed with a liberal annual pruning, say after the grove reaches an average bearing capacity of about six boxes to the tree, as before this stage the orange tree needs to be pruned very sparingly with only a shaping of the tree, owing to the fact that they are the nearest self-regulating in the matter of setting their fruit crops of any fruit-bearing tree that I know of. But there is a limit to the size of their top if their space is limited, and if closely set they must be closely pruned, and if neglected too long it takes them longer to recuperate.

I prefer the close setting method, for there is no reason why a larger yield of fruit can not be had from a greater number of trees well cared for and an annual supply of fresh fruit bearing growth, produced by a careful and judicious system of pruning to be continued during the life of the tree; which the present proprietor need have no fear of ever living to see the end of, providing that conditions are normal.

In further support of my idea a large part of the value of an orange grove is its beauty, and a grove of trees of moderate size are far more beautiful than a grove of over-grown trees, which one can neither see over nor between, besides the picking and pruning of a small tree is a thing of pleasure while on the large tree it is extremely dangerous, and why is not twelve boxes of oranges from two small trees as good as twelve boxes from one large tree?—J. W. H., Rialto.

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E. G. Wood, Owner, at Nursery or Room 732 Huntington Building, Los Angeles, Cal.

The Ornamental Garden

BY ERNEST BRAUNTON, LOS ANGELES, CAL.

FIESTA FLOWER FESTIVAL

The most attractive feature of Fiesta week will be the Flower Show held by the Southern California Horticultural Society, in Blanchard and Symphony Halls, Los Angeles, May 9th to 12th. This Society last November held the most successful flower show ever inaugurated on the Pacific Coast and the only one in the State that ever proved a financial success. In the forthcoming one Symphony Hall will be devoted entirely to sweet peas and the exhibition throughout will be one of cut flowers. The plant exhibition will be held in November.

No visitor or resident should miss this show for it will be the first chance in many years to see assembled all the floral glories of Southern California under one roof. Over $600.00 in cash prizes will be awarded in addition to a number of valuable cups. Don't forget the time and place.

SEED FOR LAWNS

In procuring seed for establishing a lawn, too great care can not be exercised. Pure seed, of high germination, is of great importance in securing a good stand of grass. Pure seed is the keynote to a clean lawn, provided the work of preparing the land has been efficiently done. Thorough preparation involves not merely the mechanical treatment of the soil to reduce it to a proper seed bed, but the use of weed-free manure and the adoption of a course of treatment previous to preparing for the lawn which shall serve to eradicate weeds. Such preparation, coupled with pure seed, should give a satisfactory stand of grass which shall need only the usual care necessary to maintain a lawn after it is once established. Too much can not be said in favor of securing pure seed, and, if possible, specially selected seed. This is of considerable importance with light seeds like bluegrass, redtop, and seeds of the bent-grasses. In the case of bluegrass, select seed weighs about 22 pounds to the bushel, while the ordinary grade of bluegrass, although it may be called pure, averages about 12 pounds to the bushel. Select or recleaned bluegrass is, therefore, the most economical to buy, although the original cost is considerably more than that of the common commercial article.

The stand of grass resulting from the use of recleaned, selected seed is much more uniform than when seed containing a great number of hulls and light seeds is employed. The same remarks hold with the bent-grasses, and even with white clover, although the market at the present time does not offer as much opportunity for selection with this last-named seed as with the bluegrass.

The quantity of seed to be used upon a lawn is of decided importance. It is better to use an excessive amount of seed and allow natural selection to eliminate the weak specimens rather than to seed sparsely with the hope that the natural habits of the plants will be sufficient to enable them to take possession of the entire area. A thick stand of plants of the desired species gives little opportunity for the development of weeds, while a thin stand of the same species offers a place for the growth of weeds, which may become determined competitors for the possession of the ground, thus subjecting the gardener to the necessity of eliminating the weeds or of re-establishing the lawn. Heavy seeding of grass is, therefore, a very important matter in the establishment of lawns.

PLANTING ON LAWNS

Trees and shrubs upon small places should occupy subordinate positions. They should not be scattered promiscuously over the surface of the lawn, but should be used in groups about the border of the grounds, in the bays of walks and drives, and about the foundation of the architectural features of the place. Street trees of necessity must be planted in rows, but all other adornments in the form of trees and shrubs should be used in a free rather than in a formal fashion. Sheared hedges of box or privet along the front of a place or upon the borders of the walks and drives are seldom or never desirable features, unless the whole treatment of the place is extremely formal. A specimen tree or shrub if properly located upon the lawn so as to break up the barrenness of a corner or to limit the vision in any direction is an appropriate object. Oftentimes trees and shrubs can be used to good effect in the immediate vicinity of buildings for softening or relieving staring architectural lines. Of late many plans for the decoration of gardens and grounds have suggested the use of trees and shrubs more in the manner of paling fences and statuary than as living objects carrying individuality. The aim should be to preserve the natural lines and characteristics peculiar to each species of plant used in any decorative scheme rather than to shape the plants into artificial forms. It is the height of folly to prune evergreens in the form of Chinese vases, animals, and articles of furniture. This type of distortion is becoming altogether too prevalent in the mad rush toward the supposed return to nature. Let us not forget in the treatment of our places that nature unadorned is adorned most, and that the normal, naturally pruned tree or shrub is much more beautiful than the one which has been trimmed into mimicry of some artificial object.

Trees and shrubs should be used to conceal unsightly objects in the foreground or in the background, to give the idea of surprise or discovery in passing from one portion of a large estate to another, and for the purpose of increasing the apparent length in drives which double back upon themselves in parks and pleasure grounds. Evergreens which are used upon the lawn should have the lower branches preserved so as to produce the effect of arising from the ground not merely by a stem but as a mass. Shrubbery groups should also be chosen so as to carry the foliage of the group to the greensward rather than to present a considerable extent of bare stalk between the foliage of the shrub and lawn.

As was stated at the outset, the lawn is the canvas upon which the architectural and landscape effects are to be produced, and all artificial structures, as well as plantations, should be made to harmonize with the contour of the ground and with the general scheme of the place, so as to produce a harmonious and pleasing picture.

"POOR MAN'S ORCHID"

Many Eastern bulb dealers advertise the iris family as "the poor man's orchid,' claiming that for cost and care, compared with results, iris will give you better satisfaction than any other plant. We beg to disagree. Iris have many fine colors and forms but in no wise compare with the gladioli in resembling the great family of orchids, either in form or color. Their cost is within reach of all and in California they should be found in every garden. Wonderful improvements are being made each year and naturally the gladioli is very variable, but unfortunately we generally see but one or two types.

WALKS AND DRIVES

While walks and drives should always be direct, they should be made to conform to the contour of the surface. In large areas and where the surface is undulating they should follow the contour of the land instead of being made straight. On small areas, however, there is no advantage in curved walks.

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In the Vegetable Garden

BY ERNEST BRAUNTON

VEGETABLE GARDENING.

It is comparatively an easy matter to grow a good garden if the owner takes the trouble to post himself and gives the necessary attention at the proper time. The best soil for vegetables is a deep, light, thoroughly drained sandy loam, well filled with vegetable matter. Deep and light soils abound throughout three-fourths of the state. If drainage and humus are wanting they must be supplied. Few soils can be made to give the best results as vegetable soils until they have been properly cultivated and manured for vegetables for several years, no matter how rich they may be considered by their owner, or how well they produce other crops.

The success of all subsequent operations in gardening depend upon the preparation of the soil. Unless stiff, tenacious clay is near the surface, plowing cannot be too deep in soil of even moderate fertility. If a soil is originally but 5 inches deep, and by plowing and incorporating manure it is made 10 inches, its quantity is doubled and its producing capacity doubled or more than doubled. Soil for vegetables should be at least 10 inches deep and pulverized throughout. A soil in a poor physical condition may contain fertilizing materials in quantities sufficient for the production of good crops, but not in an available form, and useless for plant growth until the soil becomes friable and aerated. A soil that is the most friable and mellow and possesses the greatest porosity has the greatest capacity for fertilizing materials and resists leaching and drouth. Thorough and deep pulverization not only renders available the inert plant food contained in the soil, but enables the roots to ramify through greater area and distance in their search for food. Plowing and harrowing should be continued until there is no doubt but that the soil is in the proper condition, even should it be necessary to repeat both plowing and harrowing several times. The failure of many crops is due to inadequate preparation of the soil, and that alone. It is too often the case that preparation of the soil is delayed until the time for planting, when the haste to get the seed in is greater than the care of preparation.

SOIL FOR VEGETABLES

Sandy soil and sandy loam give up water readily, so in many localities we have thirsty land; again under other conditions the land becomes "water sobbed." Soil that is too dry or too wet is not fit for vegetable growing. Careful mechanical analysis shows that there need not be any difference in structure between thirsty land, "water sobbed" and good vegetable land. The difference may be one of water supply. It should not be understood that if all thirsty land were irrigated it would make good vegetable land, nor that all "water sobbed" land if properly drained would make good vegetable land.

TURKESTAN WINTER MUSKMELONS

The production of winter muskmelons is largely increasing in California, as the local climate is splendidly suited to these late-ripening and long-keeping sorts. A number of varieties secured in Russian Turkestan by an agent of the Department of Agriculture were grown at the substation near Pomona. Planted late in May they made their growth in a very dry year without irrigation and all the varieties proved four times as prolific as the common garden varieties of muskmelon planted under similar conditions. All are melons from the native home of the finest known varieties, in the famous oases along the historic Oxus, the ancient Chorasmia and Sogdiana.

POTATO SCAB

Try soaking your seed potatoes in corrosive sublimate mixture and thereby lessen your scabby potatoes. Try some soaked and some unsoaked; it will convince you. From a single experiment carried on during the past year, the results showed that where barn-yard manure was used alone the potatoes were five times as scabby as they were where nothing was used. Where lime was used alone, they were four times as bad. Where both manure and lime were used together the scab was three times as bad.

KANSAS STANDARD TOMATO

This variety, received from Lawrence, Kansas, has demonstrated its value in this State. It made a strong, healthy growth in the experiment station garden at Berkeley; and its adaptability to the Bay region climate seems to be demonstrated by the fact that it was the first variety to ripen seed with us for some years. It is somewhat dwarf in habit and is perhaps slightly deficient in flavor, but it is a remarkably prolific fruit-producer.

TOMATO NOTES

The influence of heavy manuring upon tomatoes has engaged attention for a number of years. It is a common belief that the tomato, unlike most plants, is not benefited by rich soil or heavy fertilizing. "The plants run to vine" the gardeners say. There must be some truth in this belief, else it could not have become so widespread and be held so tenaciously. Productiveness in the tomato in the northern states is largely, if not chiefly, a question of early bearing; the plant will outlive any northern season, and its life in the East is therefore determined by contingencies of frost rather than by any inherent limit of duration. The plant matures here and continues to bear for many months, if not destroyed. Some have carried plants in bearing condition through two or more years. It is apparent, therefore, that any fertilizer which is not at once available to the plant but which gives up its materials comparatively late in the season, will maintain a vigorous growth and probably eventually bring the highest fruitfulness. Coarse stable manures belong to this class. It is some time before they become thoroughly decomposed and incorporated with the soil, and if applied heavily it is probable that they will delay the crop. Our seasons are long enough to allow the plant to live out its natural lifetime, the materials will be gradually used and the total productiveness of the plant be as great, if, in fact, not greater, than it would have been under a treatment which caused it to bear heavily at an earlier period. Thoroughly decomposed manures ought to give quicker and more satisfactory results than coarse ones, and proper concentrated fertilizers might give better results than either.

THE LENTIL

The lentil is a small branching plant with delicate pea-like leaves. The small white flowers growing in pairs are followed by flat pods, each containing two very flat round seeds, convex on both sides. Unlike the pea and bean, the lentil is eaten only when fully ripe. The brown or reddish lentil is smaller than the yellow, but of more delicate flavor.

The lentil is one of the most ancient of food plants, probably one of the first to be brought under cultivation by man. It has been brought from Holland and was accounted "fit dainties for ladies, they come so far and cost so dear." From the market gardener's point of view, the pea is the most important of the legumes. In this country and in Europe great quantities are consumed in the green or unripe state, and in Europe the dried or "split" pea is as largely used as the dry bean; with us it is less popular.

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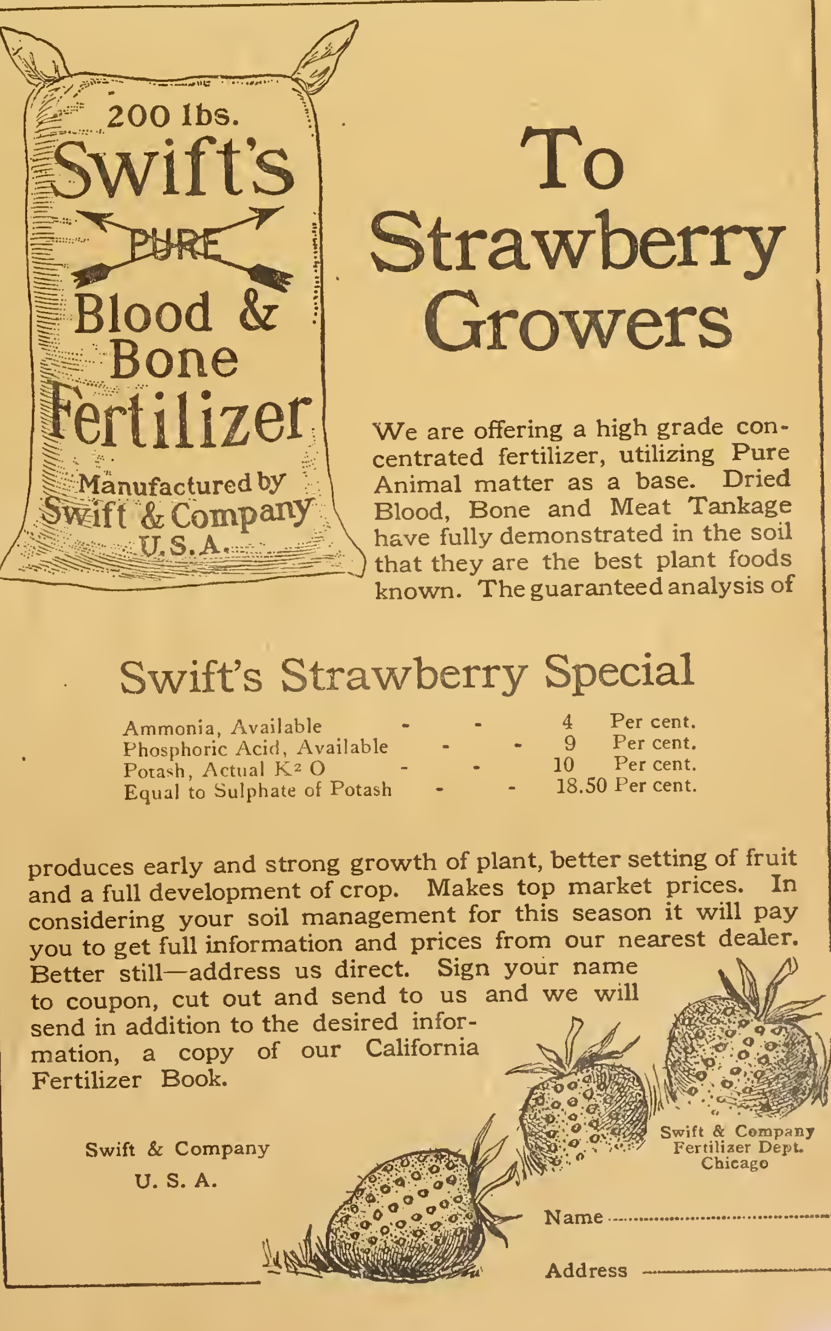

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Equal to Sulphate of Potash	18.50	Per cent.

produces early and strong growth of plant, better setting of fruit and a full development of crop. Makes top market prices. In considering your soil management for this season it will pay you to get full information and prices from our nearest dealer. Better still—address us direct. Sign your name to coupon, cut out and send to us and we will send in addition to the desired information, a copy of our California Fertilizer Book.

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Complaints About Packers—There is bitter criticism of the method adopted by growers and packers who cap their berry boxes with fine samples and fill the under layers with indifferent fruit. This year the complaint on strawberries is more general than for some time. Shippers who thus undertake to deal dishonestly with the public deserve to suffer. They are not wholly to blame for the grower comes in for considerable blame, but they should see to it that rubbish and half-rotten fruit is not allowed to be packed in boxes under any circumstances. It is not alone incumbent on the grower that he refrain from dishonest practices in putting up his pack of fruit, but it is his moral obligation and he should see to that each and every item he sends out is fixed up in the best possible manner. Leaving out of consideration, however, the moral side of the question, it will pay him.

The grower who packs his berries with perfect samples throughout will soon obtain an advertisement which will enable him to sell his produce to advantage, while the dishonest grower will lose both in price and in reputation and finally be driven from the market.

Honestly packed berries, as well as fruit of all kinds, invariably bring good prices, even when the markets are glutted. There is always a good demand for good stuff and a reputation for honest packing is a jewel worth a big price to any grower or association.

The Chicago Packer recently called attention to another fraud which shippers report has caused bitter complaint. It appears that cars of fruit and vegetables are so loaded that all the good stuff will be found near the car doors upon opening them with almost worthless goods in the ends. Such shippers evidently think that they will do business only once with receivers to whom they are undoubtedly right, but it might be added that for the most part, such crookedness is detected too early and it does not work to the profit of the shipper even in the first instance.

We are always impressed with the name of a fruit grower on a fruit package. It gives responsibility to the brand and buyers take it as a favorable indication of the growers' honesty and reliability when he is willing to put his name or label on all fruit he sends out. There are some growers in California whose berries command a fourth more in the market because their name and brand stands for honesty, and perfection in their fruits. This is worth a great deal to these growers as such a reputation is a guarantee of the best prices no matter how glutted may be the market.

As a business matter, it doesn't pay to be dishonest in packing. Grade carefully and pack honestly, these are the two elements which will insure the best prices and no "left over" for the canners, yes, honesty is the best policy.

* * *

No More Birds on Hats—Give a cheer for old Iowa. After the 4th of July the hats of the women of Iowa must be shorn of plumage of birds, other than the game bird. The last legislature provided an act that all wild birds, whether resident or migratory, shall hereafter be the property of the state. It is provided then that "no person shall, within the State of Iowa, kill or catch or have in his or her possession, living or dead, any wild bird other than a game bird, or purchase, offer for sale, transport or ship within or without the state, any such wild bird after it has been killed or caught," except that ordinary cage birds for pets, such as parrots, canaries, etc., are not included in the inhibitions of the act so far as it relates to shipment, sale, etc.

The society women of the Hawkeye State are almost ready to go into hysterics over the law, but the game wardens are sending out notes broadcast, to millionaires, bird plumage furnishing stores, and every one who catches birds for sale that the law will be vigorously enforced after July 4th.

So the plumage of the songsters and the field birds must come off the hats in Iowa. All hail the law! Let it be enforced as sharply as the provocation calls for, to the end that the song birds and the birds of plumage in the state may have their lives preserved. Some controversy having arisen over the question of whether a woman may wear any part of a bird on her hat, under a law passed by the last general assembly, an examination of the statute as passed discloses that it is extremely doubtful if the law will permit the plumage, skin or body of any non-game bird, whether native to this state or not, being worn on the hats of the ladies after July 4th of this year. It would seem that the time intervening before July 4, the ladies may wear plumage and other portions of dead birds on their hats to their hearts' content, but not afterwards.

Iowa has set an example to every state in the Union in this matter, which it will be well to follow from a humanitarian point of view, as well as to save our song birds from annihilation.

* * *

Write the Facts East—The State of California will suffer a greater loss in the false impressions given it by the San Francisco disaster, than it will by having all the facts given as they are.

It should be borne in mind that it was not the earthquake that did the greatest damage but the fire which followed. Had it been simply the earthquake the loss in life and property would have been small.

Buildings would have been wrecked, but not destroyed. They could have been repaired at a minimum expense, but when a tornado of fire swept over them, with no water to put them out the finish of the city was only a matter of hours.

Another thing. The water pipes and mains and couplings were old, worn out and bursting throughout the city before the calamity came. They were in no condition to withstand vibrations of the earth no matter how slight. Had water been normal the fires could have been put out and a great part of the city saved. As it was there could be no other alternative except destruction complete and overwhelming.

The best we can do is to write these things east candidly and frankly. Write the truth. Let the facts be known. In all human probability no such vibration will ever again be experienced on this coast.

Certainly nothing of the sort will happen if steel is used in the contsruction of the high buildings as it should be.

San Francisco and the entire coast has received a lesson it should never forget. Its water mains should be tested and its old pipes taken out at least every fifteen years. If this is done they will withstand many times the strain of such an earthquake as the one which broke them two weeks ago. It has been found on examination that the pipes laid down recently are in good condition. The most of them were not bursted, many of them were not bent, but wherever they were old and worn out they gave away. This fact should impress the water companies of all the cities of the Coast to investigate their pipes every few years to see that rust does not render them weak and liable therefore, to break when strain is imposed upon them.

Write another fact back east. The best authorities say, from what they learn by past experience, by the geological formation of the country and by our geographical location Southern California is out of the belt of severe earthquake shocks. We are immune from damaging shocks. We have never had any and we never will have. Be sure to impress this fact upon the minds of your acquaintances. If the truth shall be told California will come out all right. It is the false stories put in circulation by the press and by irresponsible parties sending out lying telegrams, that do the harm.

Write the truth to your friends and write it now.

* * *

Deadly Soda Drinks—For the past five years the leading health journals of the country have been exposing the soda fountain drinks with increasing virulence and persistency. Backed by the authority of chemists and physicians they have made as open war on the soda fountain, as the Womans Christian Temperance Union has on the saloon. But in spite of all this, the soda fountain has prospered and grown and the people have been made sick thereby.

The Cultivator is pleased to learn that the Fruit Exchanges are interesting themselves in exposing the adulterations which are on the market under the name of "fruit extracts." In a recent number of the Times, a writer exposes the "fruit extract" decoction in the following severe manner:

"Soda drinkers would be surprised to know that even in this country of fruits, the fruit extracts are made, in many cases, out of horrible-smelling acids.

Most of the lemon flavor never saw a lemon, and the strawberry flavor is not on speaking terms with a straw berry.

One firm in this city supplies most of the dope flavoring used. They send it out in bottles with a receipt for mixing the concoctions.

On the outside of the bottle of the strawberry flavoring, for instance, is the following directions: For fountain syrup, one to two ounces strawberry extract, one ounce soda foam, one ounce fruit acid solution, strawberry red food coloring to suit.

This is the epitaph on the lemon flavoring; One to two ounces extract of lemon flavoring, one ounce soda foam, two ounces fruit acid solution, light yellow food coloring to suit.

One of the commonest receipts for lemon extract is courmarin and lemon oil colored with aniline. Vanilla extract on the other hand is commonly made of courmarin colored with aniline, or of tonka bean colored.

Most of the so-called "food colorings" are coal-tar products, many of them injurious."

Continuing along this line the writer of the above takes a turn at the "soda pop," "ginger ale" and like drinks, which he avers are doped to the cork. So vile are many of the decoctions used that the Board of Health in many of the larger cities are moving to suppress the selling of these ingredients.

"The "extract" from which the flavoring is to be mixed sells for $1 a bottle, but gallons of flavoring can be made from it. Among other ingredients of the extracts are sulphuric acid and nitric acid.

As a side issue many of these firms turns out adulterated vinegar and claret made of a peculiar combination of chemicals.

It is estimated that $65,000,000 worth was sold in the United States last year, nearly a dollar for each inhabitant.

So important an industry has it become that the Standard Oil Company is said to be dickering for the control of the manufacture of bogus extract. They would be able to use many of the by-products of their petroleum in the coloring extracts.

Although the patent-medicine men have been stormed a with verbal shot and shell, the soda flavoring crimes are but little known. They do not have the additional sin of being directed at sick and helpless folk.

The Cultivator would be glad to extend the information of the poisons which lurk in the soda fountain. The danger to the public is as great as in the cigarette. Both ought to be tabooed out of existence for the good of the human family.

NEWS OF COUNTRY LIFE IN THE GOLDEN WEST

HORTICULTURE.

The Tool packing and drying house near Napa was destroyed by fire this week.

T. C. Shaw, residing south of Lodi received last year from his vineyard $500 per acre.

The Ruggles Bros., of Redlands have completed the best equipped packing house in Southern California.

An eminent Japanese bacteriologist demonstrates that the acids of lemons, apples and other fruits—citrus acid and malic acid—are capable of destroying all kinds of disease germs.

There is considerable anxiety manifested by the raisin growers about Fresno over the report that a packing house has offered 3 1-2 cents and it is threatened that a war will be created to prevent canners from closing any additional contracts at this price.

Never in the history of the Anderson and Happy valley sections has there been such a splendid prospect for fruit crops. Prunes and pears and peaches have splendid setting and the yield will be largest known. It will require the services of 900 people to gather the crop.

G. Harold Powell, Government expert in the eradication of fruit decay makes the statement that fruit under ordinary conditions in California, receives too much handling and consequently injuries to the rind cells. This, he states, is the cause of decay during shipment.

The shipment of oranges from South California for the season beginning November 1, up to Thursday night, totals 15,842 cars. For last season it was 19,810 cars, showing a shortage this season of 3,968 cars. And the shortage will continually grow from now on.—Citrograph.

The Board of Horticulture of Santa Ana has decided to begin an active crusade against wild morning glories, Bermuda and Johnson grass, etc., which, it is claimed, are proving to be a pest in that section. It is reported that the purple scale has been eradicated in that county, except for the Anaheim district.

The Hemet News gives out the information that the outlook in that locality is excellent for fruit, that the Gregory Fruit Company has leased the drier and warehouses of the Hemet Fruit Association and that the same company will operate the San Jacinto cannery. Big prices are being offered for apricot, peach, pear and tomato crops.

The Imperial Standard says: All over Imperial valley, wherever grape vines have been planted, they are loaded with young fruit. No sign of mildew anywhere, no appearance of any disease. Warm, dry air and moisture applied to roots as needed and plenty of sunshine evidently form a combination that no grape vine can resist. It just has to grow and bear fruit. In five years' time Imperial valley will be recognized as the greatest grape land in the world.

AGRICULTURE.

10,250 acres of beets have been planted for the Chino Factory for 1906.

The Fullerton Vegetable Union gave 50 crates of cabbages for the San Francisco sufferers.

120 carloads of cabbage were shipped from Fullerton up to Saturday, April 21st. The average price paid was $25 per ton.

J. H. Reed, a capitalist, is thinking of building an alfalfa mill in Sebastopol for the purpose of manufacturing alfalfa meal.

The Alta Advocate says that sugar beets in the neighborhood show signs of rotting. It is thought too much rain is the cause.

Colusa and Glenn counties claim they have raised one per cent. of the entire wheat crop of the United States in a single season.

Water is receeding in the Tulare Lake district and it is estimated now that its presence has been of the greatest value to the farmers of that section.

The railways in Los Angeles, in 1905 received 4,155,407 sacks of potatoes, 22,261 sacks of onions, 54,070 sacks of beans, and 99,336 sacks of sweet potatoes.

According to figures received by Secretary Coburn of the Kansas Board of Agriculture, Kansas farmers expect to raise 70,000,000 bushels of wheat this year.

The Santa Paula Chronicle states that during the past week 8000 sacks of beans were shipped from Saticoy, and the same amount is expected to be shipped this week.

The Institutes held last week at Carpenteria, Fillmore and Monrovia are reported to have been well attended and highly interesting in the nature of the information imparted.

Prof. Northrup of Utah states that comparatively little is known about tomato blight, although it works in such a manner that he is led to believe it is due to bacteria or germs.

The Salinas Index announces that notwithstanding the injury to the Spreckles Sugar Factory, the company will be able to handle the largest acreage of beets in the history of the factory.

It is stated by farmers in the northern part of the State that there is no indication this year of rust affecting the wheat crop, and that the present prospects are that the yield will be greater than in any year since 1884.

The Russian Thistle which the Legislature of Claifornia at its session provided the Horticultural Commissioner should see destroyed is one of the most dangerous of our agricultural pests. The plant grows in the form of the tumble weed, each stalk producing from 20,000 to 30,000 seeds. It should be vigorously cut away before permitted to blossom.

LIVE STOCK.

J. W. Price, proprietor of the Riverside Creamery Company is completing arrangements for establishing a skimming station about a mile from Corona.

The Escondido Times says another big creamery of that town is being extensively improved and when completed will be one of the best in Southern California.

The Davenport Percheron Horse Company of Davenport, Wash., has just purchased from McLaughlin Bros. the three-year-old Percheron stallion, Rosenberg. The price paid was $8000.

During the year 1905, the receipts of produce by railways in Los Angeles was as follows:

Cases of California eggs, 63,608; lbs. of butter, 5,945,468; lbs. of cheese, 2,186,707.

A hog dealer by the name of Hail, living near Chico, who is accused of stealing silverware and crockery belonging to the hotels while gathering up swill for his hogs, was arrested. He should have been arrested likewise for feeding hotel swill to his hogs.

MISCELLANEOUS.

The citizens of Tehama are about to incorporate.

It take 40,000 tons of copper per month to satisfy home and foreign demands.

The assessed valuation of Pasadena will be considerably in excess of $25,000,000 this year.

Andrew Carnegie has pledged $20,000 toward the $100,000 endowment fund now being raised for Whittier College.

Miss Martha N. Hathaway of Claremont has recently presented to Pomona College property valued at $60,000.

Geyersville is making preparations for the floral day celebration to be held there under the auspices of the Grange on May 12th.

The San Diego Electric Railway Company will use a large number of ties imported from Japan for the construction of extensions.

The State Insurance Commission estimates that insurance companies will have to pay losses in San Francisco to the amount of $250,000,000.

Edgar F. Howe has purchased the Imperial Standard. He has been in the past one of the most valuable promoters of the Imperial country.

Governor Pardee is expected to call a session of the Legislature at an early date to provide an appropriation for erecting a State Building in San Francisco.

The Social Improvement Club of Porterville is strenuously advocating the abolition of mosquitoes, and to this end is urging the city trustees to make a vigorous warfare against the pest.

Reports from San Diego county are to the effect that forestry and oiled roads are at present commanding considerable attention and the propects are that great things will be accomplished along these lines in the very near future.

A WELCOME SHIPMENT.

Probably there was nothing more welcome to the San Francisco sufferers after the late earthquake and fire than a car load of oranges from Southern California which found its way among them. No fruit had reached the city for several days; many people had had nothing to eat but a little dry bread; cooking in the city was not allowed and they were hungry when that car load of rich, juicy oranges reached them. I never saw people enjoy anything so much as they seemed to enjoy that fruit, and it gave a zest to the dry food they had been compelled to eat for several days.

FRESH FRUIT SEASON COMMENCED.

Some small shipments of cherries are now being shipped. So far these comprise a few boxes of early fruit being sent by express, but it is the commencement of the fruit season, which will continue now until it ends with grapes in November next. The shipments last year very largely exceeded 8,000 car loads, and it was a somewhat poor season for most fruits. This season, with the exception of apricots, there is every indication that shipments of all kinds of fruit will be heavier. There has been a very large increase in the acreage of table grapes and peaches in the past three years, and very many of the new orchards and vineyards are coming into bearing this year, while the young orchards are increasing their output. The apple acreage also shows a very large increase, these three fruits being the principal ones planted in the past three years. Present prospects are for a fairly good season, and with an increasing demand for our fruits in the East, there is every probability that shipments this year will be heavier than ever before, probably running up to between 9,000 and 10,000 car loads.

Those "succulent esculents" pictured on our cover page are illustrations from the catalogue of the F. Gilman Taylor Seed Co. This firm makes a specialty of the better sorts only of flower and vegetable seeds, and do not carry a "full stock of everything."

The Riverside colony of California has an irrigated area of 13.000 acres. These acres constitute the basis of community life to the extent of 10,000 inhabitants, or one inhabitant for every one and one-third acres.

LINER ADVERTISING

Advertisements in Liner Column will be charged 1¼ cents per word. No advertisement taken for less than 25 cents. Eight words to a line.

LINERS

ANCONA EGGS (FROM PERPETUAL EGG Machines), imported and domestic matings, $2, $3.50 and $5.00. L. L. Viereck, Pres. Ancona Club, Albany, Oregon.

WANTED—WILD TURKEYS EGGS AT $100 00 per setting. Address only The Grace Glory Grounds, Brawley, Calififornia. Wilds of wild Turkeys (acclimated).

BLUE ANDALUSIAN EGGS FOR HATCHING, from three noted strains, $2.50 and $3. Incubator lots $7.50 to $15.00 per 100. Mrs. T. R. Griffith, 3111 Walton avenue, Los Angeles.

FOR SALE, THOROUGHBRED, AND from prize winning Stock, Barred Rocks and White Leghorn Chickens, also eggs for hatching. Mrs. Ossina Low, Glendale, Cal. 'Phone 663.

FOR SALE—30 HORSE POWER OTTO Gas Engine. Run one season, practically new. Also one 30 horse power White Middleton. Both engines guaranteed in best condition. F. H. Osler. Pomona, Cal.

FRUIT CANNING MACHINERY FOR THE Ranch or Factory, 6 sizes, $10 to $225. All appliances, highest award by U. S. Trades Report. Address, W. S. Ritchie, Pacific Coast General Agent, Corona, Cal.

COLUMBIAN WYANDOTTE EGGS FROM winners; first ckl.; first pullet, New York; first, second, fourth, and sixth pullet; fifth cock at Boston. Eggs from $2.00 to $5.00 sitting. Send for circular. Prof. John Evans & Son, Meshanticut, R. I.

FOR SALE—WHITE MINORCAS EGGS $1.50 sitting from one of the nicest pens of Wh. Minorcas in Southern California. Lay the most eggs and the largest-whitest eggs of any breed. Call and see them at 547 W 54 St., or address 1004 E. 9th St. Also incubator chicks for sale.

Edison Phonographs and Records at factory prices, delivered free anywhere on receipt of full retail price; largest stock of Edison records west of Rockies; send for circulars. Peter Bacigalupi. 786 Mission St. San Francisco

RANCHES WANTED *For Our Clients*
Burr-Paddon Co, 40 Montgomery St., San Francisco

Live Stock and the Dairy

BY MRS. MINNA. E SHERMAN, FRESNO, CAL.

THE DAIRY SIRE.

His importance can not be exaggerated and a dairy man who lives near a town has advantages in keeping a first-class animal to use, wherever there are first-class cows. I often offer the service and three dollars for the calf when twenty-four hours' old, or five dollars straight for use of sire. So many prefer the first that a good-sized herd can soon be built up from superior native or grade cows with the pure blood of the sire.

The bull calf is usually chosen by the purchaser as cheaper to transport and as better in growing up in the surroundings that will make his home. The saving of a little money here is foolish if it can be helped, for every dollars' worth of superiority in the sire is quickly turned back in the heifers. Where $150 is the purchase price, if from the sire are raised only say fifty cows, the blood only cost $3 per head and the improved blood will produce an actual increase in butter to that amount in a month on any of them. When the sire is used for a term of years and a couple of hundred of heifers are in the herd it is soon seen what a gain there is to be counted in his improved blood.

The sire is usually the most neglected animal on the ranch, and then we wonder why his usefulness departs at say six or seven years. This is wrong, for an animal that has proven his worth should be more valuable as he grows older rather than less valuable. The best Percheron stallion I ever saw was old Huber; at twenty he had the life and style of a colt and transmitted it to his colts. I have a number that can be picked out anywhere from the rest of the colts by their vigor and action. The best of dairy sires, the one that gave the greatest vigor and breed character to the calves from common stock cows, that stamped the dairy form indelibly on all his get, was old Beauty Prince, and he was good to his untimely death at nine years. I think the secret is in exercise; he was always in a large corral and played constantly. The half barrels that held his water or feed he often wore on his horns for a bonnet while he raced around.

In selecting a calf, see that he shows the rudimentary teats, and see that he has strength, a good backbone and a good-sized stomach. He should be muscular rather than fat and have the dairy form. The head needs to be that of the male, bold and independent. Shoo him up in the lot and see if he runs and then has courage to turn and face you; I do not like to see them run clear away.

The feeding should follow the same lines as that of the heifers—skim milk, flaxseed, meal, oats, alfalfa hay and silage. Keep him growing, but not fat, as he must not transmit the faculty of putting fat on the back. Next comes the education, that first begins by restraint. It is convenient to apply it by the use of a stanchion to feed him in and then to leave him in it for a short time. With a halter made strong enough to hold him lead him around. Of course, he will object, but have a second man with a carriage whip behind, then start up, if he comes all right; if not, then a sharp tap of the whip will send him forward; walk him around and tap him every time he fails to move promptly. Later lead him from horseback, and if there is a small treadpower let him turn the separator or pump the water. Exericse, regular and prompt obedience should be required of him from the time he is a yearling, and it will last all through his life.

When he is two years old the time to dehorn has come. This done with the clippers is quickly over and the danger of goring anyone is passed. The trouble with having a well-trained bull is that everyone thinks of him as a horse or other domestic animal and forgets that there is an underlying temper that may light into a tempest when least expected, so that the horns should always come off—every one of them—at two years old. Never allow the full-grown animal to be handled without the staff hooked into his nose ring and a good halter on his head; leading with the halter and holding him away from the man leading him with the rod.

I have found that silage is as good for the sire as it is for the cows, and that thirty pounds a day, with twelve pounds of alfalfa hay, keeps him in good sleek condition. When in use give him six pounds of corn chop and shorts mixed, two parts corn to three parts shorts, changing the corn to barley sometimes; but they really need but little grain, except when they drop in condition. Silage seems to keep them in better condition than other foods; it seems to be digestible and appetizing as well as satisfying to the bovine stomach. The best criterion of health in cattle is the condition of the hide and hair; if it is mellow and smooth and handles oily under the fingers, the animal is thrifty; if harsh and rough, the animal lacks in condition.

If all would only realize that an old sire has value because of the known value of his offspring, and that with care he can be made to see his seventh generation of descendants around him, while still full of vigor, greater care would be taken of him. The value of many animals is lost by making them fighters, so that they are butchered for the sake of safety. I think that ferocity in the animal results more from the habit of hitting him over the head. If no one every corrected him except in the rear, and with a whip that stung rather than bruised, he would be less hard to manage. Use the whip on them while they are young in teaching them to obey. I have usually two aged bulls on the ranch, and when they are turned out in the pastures no one fears them, for the waving of a yellow switch at them will turn them, while they lead off in front of the person on foot, thinking they are to go ahead. Yet these same animals turned and fought hard when a stupid foreman I had last year thought he would rope one of them. The toro was too much for the man and horse; both went down in the dust. Old Manuel walked down and said, "Shoo, shoo," and the terror walked into the corral at the tapping of a cottonwood switch on his rump. On the ordinary animals I do not believe in the use of a whip at all. Cows, horses and dogs are like children in, of course, a lesser degree; they only need to be loved, coaxed and gently patted into doing right.

You need a Milk Cooler. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

SPAYING AND MANGE.

Editor Cultivator: Will you please give in The Cultivator explicit practical directions for spaying young sows?

What is affecting my young pigs? Six weeks ago two pigs from different litters in a bunch of eighteen pigs, one of them four and the other seven weeks old, became suddenly affected about their ears, the skin becoming dry and the ears curled and withered.

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There are more of the **Sharples Tubular Cream Separators** in use in California than all other makes combined. Write at once to the State Agents for Catalog R. Address **Joshua Hendy Machine Works**, Separator Dept., 61-77 Fremont St., San Francisco, Cal.

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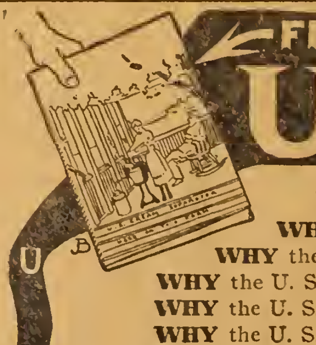

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There was also roughness of the skin on shoulders and sides. I treated them locally with kerosene emulsion, which seemed to stop the trouble, though the ears are disfigured permanently—even lost wholly in one case. Fearing a recurrence, two weeks ago all the pigs were well sprayed with crude oil emulsion. They have had dry quarters on alfalfa pasture and corn for three weeks past. For two weeks before that they were in muddy pens. Now the ear trouble is appearing again. Almost every Duroc-Jersey pig is affected, but not one of the black pigs. I shall spray with Zenoleum before your answer can reach me. Please advise me what is the matter and what to do.

C. A. F., Brawley.

As to spraying sows this is rather an easy operation but hardly possible to describe in print. In every neighborhood there are men that can show you how or who will do it for you at a reasonable price.

These young pigs probably have a form of mange and it was this trouble with ears and bodies that years ago caused the people of California to abandon the raising of white hogs, as the black ones are not subject to skin or parasitic trouble of the skin. We used creolin for our spraying; it is probably nearly the same as zenoleum. The mangy spots need to be thoroughly washed with a good soft soap, put on as a lather and allowed to penetrate before washing it off. Then sulphur and lard can be rubbed in, and this will have to be repeated at the end of a week. The zenoleum can be used instead of the lard and sulphur. These troubles are infectious and everything that the pigs have rubbed against must be disinfected or the pigs removed to fresh pens. After a summer the old pen will probably be all right. But after this introduce new stock only after it has been kept by itself for two weeks, and be sure it is clean from the trouble. Mange is one of the greatest and most expensive curses that a stock man can meet, for it lurks on the place and every little while comes an outbreak. It will be found cheaper on a stock farm to whitewash everything around the pens and stables and fences often than to fight disease.

KICKING COW.

Editor Cultivator: Will you please tell me through The Cultivator the best way to break a young cow from kicking?

L. L. K., Orange.

A kicking cow should not exist, for she should have either been broken of it as a heifer or she should have been sent to the butcher. The heifer can be taken in several ways; first of all a good-tempered gentleman is necessary, then buckle a strap around the cow's body in front of the udder; if the cow offers to kick, tighten the strap until she gives up.

Second way, tie the end of a soft rope to cow's foot, pass the rope around a post to the rear of the cow, hold the rope tight and have a second man milk her.

My own milkers have taken this way: they tie the heifer up short and then take a soft rope and tie the two hind legs together above the hock, then they take the bucket firmly between their knees, push the heifer against the side of the stall, and sit down pressing their head into the hollow place in the thigh above the udder; the heifer may kick, but they push their head in all the closer and harder. Gripping her tightly into the side of the stall, all the while they talk softly to her. They also have her eating while the milking is going on. Usually a week of this persistence and kindness and holding the heifer so she cannot kick brings her to time and the trouble ends.

SIMPLY A FREAK.

A subscriber here wants to know the reason for his cow acting as she does. Since the last calf, some time in the winter has given practically no milk, even when just fresh not over a quart and now about a pint. She is quite an old cow, but not too old but what she should still be all right. Handled and fed same as usual and same as other cows except that milked four or five weeks longer than usual, so was dry only about two weeks. Previous to last calf was a fine cow and gave great deal of milk.

H., Fresno.

This is a freak evidently, for if the udder is in normal condition and the cow healthy that cannot be accounted for. I have had cows do so; one now a cow of records, whose name I will not give, as I no longer own her, that used to make a great record one year and the next would loaf along making a scant three hundred pounds of butter for the year. I would retain this cow until she has calved again, except under one condition, that is, if she should put the flesh on her back, then I would know that she is reverting to a beef strain in her ancestry and that the shambles is her destiny.

SEED CORN AND MILKING MACHINES.

Mrs. M. E. Sherman: I have read your dairy articles in the California Cultivator with great interest, and I feel that they have been of great value to me—this is my excuse for bothering you by writing for additional information. I note that you raise corn at Fresno successfully. Will you kindly let me know what variety you have found the most satisfactory?

Can you give me the address of the manufacturers of milking machnes? I am told that they are putting out a few machines in the hands of expert machine men who are also dairymen, for experimental purposes, and I would be glad to communicate with these companies on that basis.

W. J. W., Lathrop.

The names of the seed corns used for silage are given in last week's Cultivator, otherwise I use any dent corn that I can buy in the market. No, I have no seed corn this year, as I had a mistake happen by mixing up the seed corn in the granary with other feeds and the cows got it all. Accidents like these happen often with us, but I think are now past, for my old foreman, after seven years of service and then seven years of serving others, has come back to me and things are going smoothly. You see, we know each other's ways and he knows where I will tumble down, and I know where he will forget, so we balance each other up.

The machines most favorably spoken of are the ones that Baker & Hamilton are selling and the one manufactured by the Rockhill Foundry Company, of Roanoke, Va. I do not know that any are being put out except on sale. The one operating near Oakland is at present being run by the machine company. I was told to test it more thoroughly.

KICKING HEIFER.

Editor Cultivator: Will you tell me how to break my Jersey heifer of kicking? She has only just begun the habit.—Mrs. C. B. G., San Pedro.

Here is a remedy that is simple and it often effects a permanent cure of the kicking habit. Tie a rope around the cow's head or neck, put a half hitch or noose around her nose and draw her head up about six or eight inches above its customary pose. It need not be drawn high enough to cause her serious pain or uneasiness, and while her head is up she can not lift a hind foot high enough to kick to any harmful extent. Examine the teats, maybe they are sore. A cow seldom kicks unless something is wrong or she suffers pain. If the teats are sore, or if they seem hard, rub on some carbolized vaseline two or three times.

WHEAT NOT GOOD FOR HORSES.

It is a mistake, says Goodall's Farmer, to feed horses on wheat alone. Experiments show that much of the grain is not digested and that horses fed entirely upon wheat very quickly develop intestinal troubles. A ration in which one-third or one-fourth wheat is used is not hurtful, but there is nothing so good for horses as corn and oats with plenty of alfalfa hay. Horses require less grain when fed on clover. If wheat is to be fed at all it should be fed in the shape of bran and shorts, and not whole.

Veterinary Instruments, Black Leg and Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

WORMS IN HOGS.

Hogs affected with worms in the intestines run down in condition, become very thin and lank, back is arched, eyes dull, refuse feed, walk stiffy, and appears lifeless. The worms may be very numerous, in bad cases completely filling the intestines. The pigs die if not treated. To secure the best results, affected hogs should receive individual treatment. Twenty-four hours before administering treatment very little feed should be given them. Then give the following medicine, as a drench, to each one hundred-pound hog; larger or smaller hogs should receive a dose in proportion: Oil of turpentine, four drams; liquor ferri dialysatus, one-half dram; raw linseed oil, six ounces. If necessary, repeat the dose in four days. After worms have been removed, give a tonic to put the pigs in condition.

After a lamb is a few weeks old he can get along pretty well, but previous to that time the flockmaster should see that he gets the proper nourishment and is protected from storms.

Cream Separators, all sizes, all prices. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

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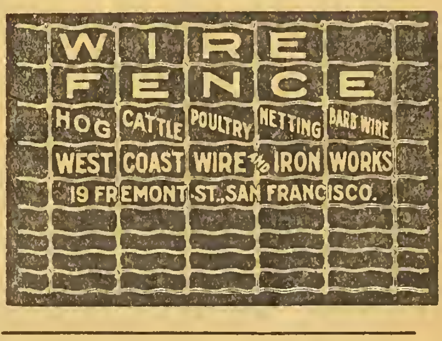

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Pink Eye, Distemper and all diseases Nose and Throat
Cures the sick and acts as a preventive for others, and is given on the teeth and tongue. Safe for Brood Mares and Colts and all others. $1 00 per box, ½ doz. $5.00. Sold by druggists, or sent express paid.
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No finer combination in breeding can be found in the State. This individual is fit to head the best herd. Detailed information on application.
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Having sold my ranch I am forced to sell Golden of Biltmore. 60082, a grandson of Golden Lad's. Golden of Biltmore is one of the best, ***if not the best*** sire on the coast, several of his daughters less than two years old selling for over $200 each. Highest bidder for next sixty days takes him. If everything is not just as represented, I will give anyone the ***bull free of charge. I sell on merit.***
C. S. Burgess, Riverside, Cal.

Pure St. Lambert Bull
—ST. LAMBERT OF RAMONA, No. 62633,—
heads the Ramona Herd of Registered Jerseys of
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Have moved their herd of Jerseys from San Bernardino, Cal., to the famous Imperial Valley, and hereafter their post office address will be Heber, San Diego Co., Cal., from which they will conduct all their business. Abundant green feed every day in the year will be of great advantage in the best development of our young stock.
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Service bull "SARGENT FOX," 64833. Bred on the Island of Jersey. Sire, the great Flying Fox, that sold at auction for $7,500. Dam, Miss Sargent, reserve winner over Jersey; winner of seven first prizes and five championship cups. "One of the grandest cows the island has ever produced."

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Sons of imported Golden Marquis out of prize winning and tested dams, for sale.
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At head of herd. Young stock for sale.
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Profit in the Poultry Yard

BY MRS. A. BASLEY, HOLLYWOOD, CAL.

INSECT PESTS (Continued)

In our last talk on some of the insects that make a light egg basket, which also means a light pocketbook, we considered two of the worst pests in this part of the world, the tick and the mite. There are many insects affecting poultry besides these.

There are mosquitoes which are to be found in many localities and become (especially in our Hawaiian Islands and in some parts of New Jersey, Florida and Alabama) a serious pest to fowls.

Where fowls are troubled by mosquitoes the best protection is afforded by greasing the comb, face and wattles with carbolic salve or carbolated vaseline. Mosquitoes breed in cisterns, water tanks and rain barrels, these may be kept free from the larvae by pouring a little crude petroleum or coal oil into the water, the oil floats and prevents the mosquitoes from breeding in it and if the water is drawn from the bottom it will not be unfit for drinking. In larger reservoirs a few small fish will keep the water comparatively free from mosquitoes. Sponging the bites with a solution of permanganate of potash, or even a little bi-carbonate of soda, will give relief.

* * *

Fleas

The common hen flea (Pulex avium) is prevalent in the Pacific States. It is found in filth hen houses, especially those located on sandy soil. Dirty nests, cracks, dust and dark corners are favorite breeding places for them. They produce intense irritation of the skin, and in young birds the growth may be permanently stunted, and very young chickens may be killed by them.

For treating flea bites bathe the bites with vinegar and water, or lemon juice, and apply carbolated vaseline, or lard in which a little carbolic acid has been mixed—five drops of ninety per cent carbolic acid to a tablespoon of lard. To free poultry houses and yards of fleas use whitewash freely, adding a pint of crude carbolic acid to every twelve gallons of whitewash. Spray it or slop it thoroughly into all the corners and cracks. Use carbolized lime, tobacco dust and moth balls in the nests. Dark dusty places in the poultry yards afford favorable breeding places for fleas; these should be soaked with hot soap suds or boiling salt water to kill the young fleas.

* * *

Lice

There are nine varieties of body lice affecting poultry. Each of the varieties has some favorite part of the fowl's body which is its camping ground in preference to other parts, and it seldom trespasses on the neighboring claims. There are, however, two varieties which are wandering lice, and may be found on all parts of the fowl These lice not only travel from fowl to fowl on the roosts at night, but frequently leave the fowls to attach themselves to persons handling them, and may be found in the nests, on the roosts, and even on the walls of the hen house. These lice spread rapidly, one infested bird being capable of spreading the vermin through a whole large flock. In young chicks they cause dumpishness, drooping wings, indifference to food, and may stunt or even kill the chicks.

One of the best means of preventing lice is a dust bath. This bath should be a wallow of freshly turned earth, mellow and slightly damp, out of doors, under some tree in the summer time, or in a box six or eight inches deep in the hennery in rainy weather. Provided with a good dust bath healthy hens will almost keep themselves clean from lice. Not so the cockerels; they are careless about their toilets, and must frequently be examined, and if necessary, dusted.

If fowls are badly infested with lice they should be well dusted with a good lice powder, of which there are a number on the market. Two good powders can be made as follows: To one peck of sifted coal ashes, add one-half ounce of 90% carbolc acid; when mixed thoroughly, add an equal amount of tobacco dust; or, take half a peck of sifted road dust, four fluid ounces of any good liquid lice killer; mix thoroughly and add bulk for bulk of tobacco dust.

The roosts may be painted with liquid lice killer, or the fowl placed in a box, the floor of which has been painted with lice killer, and the top covered with burlap, care being taken not to smother the hen. The nits or eggs of lice hatch about every five days, so, for badly infested fowls the treatment should be repeated until all the young lice are exterminated.

An excellent plan in warm summer weather, just at the commencement of the moult, for getting rid of lice, is to immerse the fowls in a diluted kerosene emulsion, wetting them thoroughly to the skin, or to dip them in strong

White Minorca and Buff Orpinton Eggs
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Indian Runner Duck Eggs, 65c per 12, $4 per 100. All healthy and standard bred stock.
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Wanted—To Exchange, 20 Barred Rock hens and 2 Barred Rock cockerels for same No. S. C. Wh. Leghorn hens and cockerels. Correspondence solicited. **Morris Bros., Banning, Cal.**

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Hart's strain. Winners of five firsts at Los Angeles Show, '06, and always winners wherever exhibited. Write for prices.
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Special offer of breeding stock. To make room for young stock I offer two pens of my select White Rock breeders, each consisting of 6 fine 2-year-old hens and a splendid yearling male, at $12 for the pen. Or, if preferred, will sell one pen of 6 extra good yearling hens with vigorous 2-year-old cock at same price. These birds will please you.
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You must kill the lice on the fowls some way. If you don't care to handle them singly, use our liquid
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Simply paint the roosts and drop boards with it. The fumes arise and kill the lice on fowl and pen. It catches them all to the last mite, and it takes the nit as soon as it comes to life. The fumes do the work. It is the perfect, easy method of protection and cure. But if you like the powder treatment better, don't forget the old reliable **Prussian Lice Powder.**
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Prices: Lice Killer, 50c and $1.00; 5 gallon can, $4.00. Lice Powder, 25c; by mail 40c. Remember also our famous **Prussian Poultry Food.** Get either of these from your dealer. If you don't find them write us at once. We will supply you and send you also our 68-page book.
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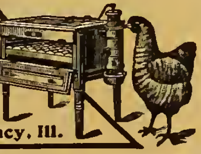

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Best of Stock. Great Layers.
$1.50 setting, $8 100, $65 1000.
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White and Silver-Laced Wyandottes
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tobacco water. A well known poultryman in Pennsylvania gives the following advice: Take the strongest and purest tobacco (Weyman's cut and dry) twenty-five cents worth being ample to clean off three hundred fowls. I make the decoction quite strong. If the user will observe a few points which I will give, no one will ever regret using tobacco to kill lice, and not a solitary one will be left.

First, for small chicks, if the dipping is done out of doors, the thermometer must be at least 80 degrees in the shade, else it will chill the chicks; second, the water should never be more than blood warm, say 90 degrees; third, this is most important, every solitary feather must be made soaking wet, else you will not make a clean job of it. In dipping, all fowls having heavy plumage, like the Brahma and Cochins, the feathers must be raised with the hand and the water allowed to thoroughly wet the bird to the skin; this takes from one to two minutes for large, well-feathered fowls. If a dry feather is left, there will be lice upon it. I do not dip the head under, but where the fowl was quiet I would dip the head back until all was under up to the eyes, and where they would not hold still, I would use a small sponge and wet the top of the heads. No one who has fowls troubled with lice need fear to try this; it is very effective.

* * *

Scaly Leg Mites.

Scaly legs are caused by a mite which burrows under the scale of the feet and legs, and if neglected may burrow into the shank bones and cause death. It is very infectious. One fowl with scaly legs may infect a whole flock. It can be easily cured if taken in time. Make an ointment of equal parts of kerosene, lard and sulphur, and after soaking the feet in warm suds rubbing vigorously with an old tooth brush, rub in well the ointment. Three or four applications every other day will usually cure it, but after a month it is better to give one more treatment.

* * *

Depluming Mites

These mites cause loss of feathers or baldness; they are to be found at the root of the feathers and cause much irritation. They also frequently cause feather pulling among the fowls. They can be exterminated by thoroughly washing the fowls in the diluted kerosene and carbolic emulsion. The perches and dropping boards should be painted with a good liquid lice killer.

* * *

EDITOR'S QUESTION BOX.

Turkeys. (Mrs. G. J., Geyserville.) Will you kindly tell me through the columns of your valuable paper what is the best food for young turkeys? I feed onions with Coulson's food, but they don't seem to care for it. Trusting an early answer.

Answer. I will tell you the way I feed little turkeys. There may be a better way, but as I usually raise every one, barring accidents, I can vouch for its being a good method.

The first food is coarse sand or chick grit and a drink of milk. Then when they are 24 hours old, I put fresh laid eggs in cold water and boil them 20 minutes, shell and all, add equal parts of dry bread crumbs and feed dry, taking away what they leave and feed the mother separately.

The next day I feed the same, but add very finely chopped lettuce or dandelion or green mustard leaves and tender onion tops. This is their breakfast and supper. For dinner they have a little curd (cottage cheese made from clabber milk). In a few days I add cracked or whole wheat to their supper, and frequently, if short of bread crumbs, add rolled breakfast oats to the egg and onion. I always chop up one onion a day with the egg and bread crumb unless the onion tops are very tender. I knew a man in Kansas who raised his turkeys on an exclusive diet of onion tops and curd, and they did well. In a few days I commence to add wheat to their breakfast and supper, and at two weeks I gradually arrive at giving them wheat and rolled oats for breakfast; at about 10 o'clock a head of lettuce to tear up; at noon cottage cheese; and at about 4 or 5 o'clock their supper of egg, bread crumbs, rolled oats, lettuce, and always an onion cut up. I give them one fountain of clean, pure water and another of sweet milk. There are two chief causes of mortality in little turkeys, lice and over feeding. Under feed your little turkeys, do not give them any grain but wheat until they are two months old. If you follow these simple directions I know you will succeed in raising all your little turkeys.

* * *

Swelled Face. (A. E. S. C., Lordsburg.) I have a white Plymouth Rock pullet (nine months old) which recently developed a bad swelling just under the eye. It is smooth, round, rather hard, and over ¼-inch in diameter. The pullet is otherwise in good condition and general health does not seem to be seriously affected. There has been no sickness of any kind in the flock previously. Please let me know, if possible, through the Cultivator what the matter is.

Answer. Your pullet has either a cold or a barley beard or foxtail beard or a burr of some kind which has entered through nostril or eye. For cold rub the lump with camphorated oil or camphorated vaseline. Some advise opening the lump as it is often a small tumor and this is good plan if it be a burr or thorn, but if it comes from a cold I prefer rubbing with oil, camphorated, eucalyptus or carbolated vaseline.

POULTRY IN PHOENIX

The raising of poultry and squabs is another occupation in which many Arizona women, and especially those around Phoenix, are actively and successfully engaged, and from which they gain good profits. There are very good openings for the poultry business in the northern part of the Territory, where the demand for fresh eggs and young chickens is always so far in excess of the supply as to keep the prices high all the year. For the woman who thoroughly understands the successful raising of poultry there is a veritable fortune in store.—The Earth.

No Results No Pay

WE have spent a vast amount of money experimenting with Poultry Feeds—compounding, grinding and mixing different grains with seeds, alfalfa and meat in hundreds of combinations. Then feeding it and watching what happened.

The result of this time and money is

Purina Poultry Feeds

They will cause a hen to lay all the eggs she should, day after day, year after year, winter and summer, and will keep her healthy and vigorous every minute.

And they will do it every time—not just once in a while.

But don't take our word for it—try the Purina Feeds on your hens at our expense.

If the results don't come, just tie up the bag and write us and we'll return every penny of your money and tell you where to send the balance. You are not out a cent in making the trial, for we will deliver through your dealer or direct, FREIGHT PAID, and the feed used in testing will cost you nothing.

Ask for particulars about our FREE TEST Plan. Write today—you can't afford to wait.

This is the Money Back Line——Ask for particulars about our FREE TEST Plan. Write today—you can't afford to wait.

ACME MILLS CO.
PACIFIC COAST MANUFACTURERS
PORTLAND, OREGON

Malthoid Roofing

There is no better covering for your poultry houses than Malthoid Roofing. It is offensive to insects, clean and odorless, and will remain proof against the severest cold and hot weather. Poultry houses covered with Malthoid are warmer in winter and cooler in summer than those covered with roofs of shingles, boards, tin, iron and many inferior grades of prepared roofing. Send for booklet.

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San Francisco : Portland : Seattle
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Los Angeles Office 313 NO. LOS ANGELES ST.

Mountain View Poultry Ranch

S. C. White Leghorns—Heavy layers. **Eggs, $1.50** per 15, $5.00 per 100.

Indian Runner Ducks—Males for sale. **Eggs, $1.00** per 13, $3.00 per 50, $5.00 per 100.

Mrs. J. L. Updyke - Fullerton, Cal.
Successor to Jacob Kreger

New Hatchery
Baby Chicks

White Leghorns, 10c each. Large orders a specialty. Eggs from fine, large thoroughbred stock. Terms cash. Order now.

Wm. A. Green, Azusa, Cal.
Home Phone 5184

200-250 Egg Fowls | **WHITE WYANDOTTES** | **16 Prizes San Francisco**

Scored by one of the greatest of Madison Square judges, our White Wyandottes have stood the test and are supreme on the Pacific Coast.

In 30 consecutive days, ending April 24th, "Madam White," 1st prize hen and "one of the ten whitest birds in the U. S.," laid 26 eggs, all of which sold at $1.00 each.

Eggs, $3.00 and $5.00 per 15. Incubator lots, any quantity, $10.00 and $15.00 per 100.

Express prepaid, 100% fertility guaranteed **Discount of 33⅓%** on May orders. Beautiful **Circular** and mating list free.

CAPITOL AVENUE POULTRY FARM
A. L. R. MANTZ Rural 21, Box 98k SAN JOSE, CAL.

Single Comb White Leghorns and Indian Runner Ducks

Eggs, $1.50 per setting. $6.00 per 100. Send for illustrated catalogue.

John P. Boden, 638 Second St., Watsonville, Cal.

S.C. White Leghorns Indian Runner Ducks

Eggs, $1 per setting, or $5 per 100. Leghorns of McFarlane strain Fertility high, 80% guaranteed. ***J. E. Beadle, 901 No. St. Louis St., Los Angeles.***

Blue Andalusians

At Los Angeles, 1906, our strain in a class of 63 Andalusians with 16 birds won more firsts than all our competitors combined. Eggs, $1.50 and $2.00 per 14.

Blue Ridge Poultry Yards, 128 Avenue 32 Los Angeles

White and Buff Wyandottes

Prize-Winning, Egg-Laying,
Wealth-Producing Strain.

M. E. DILLINGHAM, Bx67 San Gabriel, Cal.

THOROUGHBRED YOUNG CHICKS

White Leghorns, 10c.
White Ply. Rocks, 12½c.

C. L. GREEN, Manager, ANAHEIM, CAL.

SONOMA-AMERICAN
INCUBATOR

Send for large circular fully describing these machines.

Sonoma-American Incubator Co., - Petaluma, Cal.

EGGS FOR HATCHING

from a heavy-laying strain of
SINGLE COMB WHITE LEGHORNS

I guarantee 100% fertile. Write for prices.

Golden State Poultry Yards, Lordsburg, Cal,
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$8.00 COCHINS $8.00
A Trio—Buff, Black or White

Send for circular, giving undefeated show records. These are the best winter layers, finest table fowls, and by far the most healthy and hardy. Eggs, $2.00 per setting of 15. Prize winners, Eggs, $3.

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SAN DIEGO. - - - CALIFORNIA.

Chickens and Eggs

Having handled Poultry in this market for the past thirty years, we can give you the best results and prompt returns.

D. E. Allison & Co., Inc.
119-123 Washington St., San Francisco

Single Comb Brown Leghorns
Exclusively

Stock for sale and eggs for hatching. Eggs from first pen $2.00 per 15 eggs, second pen $1.50 per 15. Incubator lots for $6.00 per 100 eggs. They have always won first prize whenever shown. Large birds and heavy layers.

W. E. Mercer - - Ventura, Cal,

A POULTRY COLONY
NEAR LOS ANGELES HAS BEEN FORMED

for mutual benefits. Situation unexcelled; plenty of good water, splendid soil and close to town. Only a few acres left. Apply at once to

Anna L. Pinkerton

Realty Trust Company, 129 So. Broadway,
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30 DAYS TRIAL

Buy From Our Factory—Save One-Third.

PRACTICAL INCUBATORS positively the best. Hatches more and stronger chicks. 10 YEARS' GUARANTEE

Cat. free. PRACTICAL INC. CO., 720 S. 11th St. San Jose, Cal.

FOR SIX YEARS

Albers' Black Minorcas

Have led in the shows every year, and they lead all breeds in egg production]the time. Eggs in large or small ots. Stock for sale. Circular free.

GEO. R. ALBERS
4849 MARMION WAY LOS ANGELES, CAL.

CARE OF CHICKS.

This is the time of the year when the little chicks need the greatest care. Failure or success will depend upon the successful handling of the little fellows during the next sixty days. Mrs. Osborne says in the Poultry Tribune:

The greatest mortality among chicks usually occurs within the first three weeks of their lives, and if we can safely tide them over this period and keep them healthy and growing our success is assured unless some unforeseen danger should befall them. Within this period is laid the foundation for a strong, healthy constitution, and this depends altogether on the care and treatment they receive as to food and shelter. To raise our chicks successfully, they should be hatched from eggs containing strong germs, and these are only laid by hens that are healthy and in good condition, mated with active and vigorous males.

After the chicks are hatched keep them warm and quiet for about 36 hours. Let them sleep and grow strong, which will be of more benefit to them than any care or food we can give them. The nursery under the trays in the incubators being the best place to keep them. When they are taken from the incubator they should be put into a brooder, warmed to at least 90 degrees, and placed in a warm room and kept there for several days until they learn to go in under the hover where they should. Little chicks, when first put into the brooder, will often huddle in the coldest corner, and soon become chilled, rather than go under the hover, so we must be watchful of these small items, for they are what bring success.

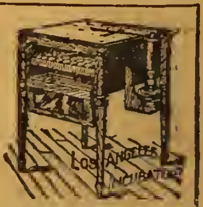
After being placed in the brooder their first feed should be some fine grit, and they should have pure water to drink placed in suitable vessels so they cannot get themselves wet. Here let me say, I have never found anything better for that purpose than a tin can such as corn or tomatoes come in; punch a small hole in the side about one-half inch from the top, fill with water, place a saucer over it and invert, and it will make an ideal fountain for small chicks. For their next feed we use the eggs tested out of the incubator and boiled forty minutes, when the yolks will be dry and crumbly and easily digested. Soon we begin to give them pin head oats and some of the different chick foods that are placed on the market ready mixed in the right proportion. Broken rice is added to their bill of fare, also cracked wheat hulled is another good food for them. After a week or ten days a little tender beef, or other lean meat hung up for them to pick at and pull at, will give them exercise as well as great satisfaction. A little green food is also beneficial to them, care being taken not to give enough to cause bowel trouble. The bottom of the brooder should be covered with some litter, and for very small chicks nothing better can be used than wheat bran, as the small particles they may pick up is of great benefit to them. Later chaff or the sweepings from the barn, where the hay is stored, is excellent, as they will find bits of broken clover leaves and seeds, also grass and weed seed, which will keep them healthy and happy, scratching and picking after them until old enough to run at large about the yards. Along with this line of feeding, extra precaution must be taken to keep the body temperature maintained to a normal standard of

Standard Bred S. C. White Leghorns

EXTRA LARGE BIRDS AND HEAVY LAYERS. Eggs, $2 per 15; $8 per 100; $60 per 1000 from January until July only.

CAPTAIN MITCHELL SANTA BARBARA, CAL.

Author of "A Practical Poultry Plant for Southern California," $1.25 cloth binding, on sale by Calif. Cultivator



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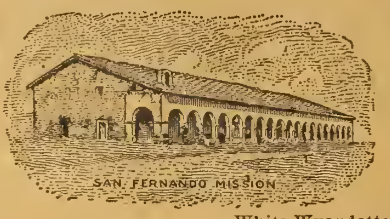
HENRY ALBERS 315 S. MAIN ST. LOS AGNELES

Dean's Pacific is an Incubator built on scientific plans and has all the latest improvements. Every machine guaranteed. "Facts From Experience" and Catalog for the asking. Address ***Dean's Place, 2509 Central Avenue, Los Angeles.***



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Largest Breeder of WHITE WYANDOTTES on the Pacific Coast

¼ Wild Mammouth Bronze Turkeys.

1906 Winnings 32 Prizes Write for Circular Clear Eggs Replaced

MRS. C. D. HUBBARD,
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White Wyandotte Stock for sale, $1.50 and up.

Emery's Pure Meat Meal

Don't believe all we say, but just enough to buy our Poultry Foods

Ask your nearest dealer for them and take no imitations

Emery's "B. B. & B."

THE PACIFIC GUANO & FERTILIZER CO. Successors to N.Ohlandt & Co San Francisco, Cal.

Caponizing Set

Double Your Profits by Caponizing.

Complete with Instructions, $2.50, Postpaid

STOCKMEN'S SUPPLY CO
FRESNO, CALIFORNIA

West Coast Chick Feed

A perfectly balanced ration for the growing chicks. All pure food, no filler, no waste, hence cheapest. Keeps them growing and healthy. Made by

WEST COAST STOCK FOOD CO.
818 San Fernando St. (through to Alameda) Los Angeles, Cal.

SAM'L R. KELLAM, President of the L. A. Co. Poultry Association, says: "West Coast Chick Feed is the best feed for young chicks I have ever used."

MRS. A. BASLEY, the celebrated poultry authority says: "I want some more of your West Coast Chick Feed for it is excellent. It is purer, cleaner and appears better balanced than other feed I have been using, and to tell you the truth I have been experimenting feeeding both together and they always eat yours in preference."

S. M. BUTLER, Lamanda Park, the well known poultry judge and successful breeder, says: "I want to say that too much praise can't be given West Coast Chick Feed for growing Chicks."

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MARDEN EGG FARM
HYNES, CALIFORNIA

Breeders of S. C. White Leghorns Exclusively

Fine Feathers alone do not make the profitable hen. Our fowls have the reputation of being ***extra large, handsome*** and ***extra heavy layers.*** Last season, our eggs averaged over 95 per cent. fertile. ***Remember***—In getting eggs from us, you do not get them from the general runs. We have but one grade of eggs to sell for hatching and those are from our breeding pen composed of only the choicest fowls, selected from hundreds that are ***bred to lay.*** Hens that approach the ***200 egg record.***

Price of Eggs—$1.50 per 15, $5 per 100. ***Send for Illustrated Catalogue. Address,***

LEO. W. MARDEN, Manager

growth. Give no mashes or sloppy food, for I am positive a much larger percentage of chicks can be raised if fed on dry food entirely, with plenty of grit and a little charcoal to help digest it.

Another item not to be overlooked is to keep the growing chicks separated according to size, the larger should run together and hover together and the smaller by themselves.

The whole problem of raising chicks successfully is to simply keep them growing from hatch to maturity.

CHANGE THE DIRT FLOOR.

Every year the dirt that forms the floor of the poultry houses should be removed to the depth of three or four inches and fresh earth put in its place. This is very necessary to the health of the fowls as the soil, after forming the floor of a house for a year, becomes filthy from droopings and germs that promote disease. A neglected house is a sure breeder of cholera and other ailments to which poultry are heir. When the fresh soil is put in, it is well also to make a thin whitewash, add a gill of crude carbolic acid to every gallon of the wash, then apply with a spray pump, forcing the mixture into all crevices of the building, roof and sides. This is an excellent purifier and germicide as well as destroyer of lice and mites upon whose presence in the house it is usually safe to rely on. Then litter should be placed on top of the fresh earth floor. This litter serves to carpet the floor, keeping the birds' feet warm as well as serving as a medium in which to mix the small grains to encourage the fowls to scratch and thereby obtain the exercise they so much need. Four inches of litter is plenty, as too much rather discourages the efforts of the fowls and they do not take as much exercise as if a smaller amount of litter was used. The yard outside of the houses should be plowed up early in the season so as to purify the ground and give the hens a chance to dig up worms and scratch around generally. The yards should be plowed up several times during the year.

HELP FOR LAYING HENS.

People are not wont to give the hen credit for having much sense, but there is nothing in the way of birds or animal on the farm that will respond more quickly to proper treatment or resent improper treatment than the laying pullet or hen.

In the first flush of egg production the pullet is likely to be content with reasonable care, food and shelter, but later in the year she seems to realize that her eggs are valuable and makes certain demands. It is not a good plan to make pets of laying hens, but it certainly pays to pay considerable attention to their wants. See that the food is furnished in variety, that there is more or less green stuff, especially in the fall after they have come from the range, that there is the sunny and sandy spot in which the hens may feather themselves, that there is grit for them to pick at and that the nest boxes are clean and well placed. All these things really come under the heading of proper care, but some persons look upon most of them as luxuries that it is foolish to think of. Try the plans suggested, keeping an accurate account of their cost, and you will find it is profitable to continue the plan.—Farm Stock Journal.

SUNDAY EGGS FOR MISSIONS.

Word comes from Harrodsburg, Ky., that the women of the Bethel Presbytery in that county have decided to give to the cause of missions hereafter all the eggs laid by their hens on Sunday. The question came up at a meeting of their missionary society. The presiding officer read her report, showing that in the year just ended the society had given $23,000 for home and foreign missions.

The announcement set the meeting aflame, and one of the most active members arose with the suggestion that they strive to still higher things. Ways and means were called for, and the egg proposition was laid before the meeting.

At first it was unanimously popular, but after the first flush of the fever had passed several of the members who have dozens of sacrilegious hens, objected. They thought this would be a discrimination. They argued long and loud, but the original motion prevailed, and the Sunday eggs will hereafter be turned over to the mission fund.—Petaluma Journal.

A hen can't dig and scratch lice all night and keep healthy, and a broody hen cannot remain quiet with hundreds of parasites making football rushes over her anatomy at all hours.

Lice breathe through their pores, so any dust will stop their breath and we owe it to Biddie to make her as comfortable as possible. Give her a dust bath.

Feed the hens and roosters well on a variety of nitrogenous foods during mating so as to secure strong, fertile eggs.

Put fresh straw in the nest boxes every week. This helps to keep mites from becoming numerous.

Early hatched chicks will get a good start before hot weather and be better able to combat lice.

Huskins' White Wyandottes
Prize winners for two years, 1905 and 1906, at L. A. Eggs for hatching from standard bred stock, $1.50 per dozen, or if you mention Cultivator, will send thirteen.
A. W. Huskins, 713 Waterloo St., Los Angeles

White Plymouth Rock Poultry Ranch
Eggs for hatching from First-Class Stock $6.00 per 100, $1.50 per setting 15 eggs.
J.T. DAVIS, Prop. POMONA, CAL.

Blue Andalusian Eggs
$1.50 and $2.00 for 15, $7.00 per 100. Free range. I raised and sold cockerel winning first prize at late L. A. poultry show. Stock. Mrs. J. S. Duff, 3145 S. Hoover St., Los Angeles, Cal.

Standard and Line-Bred Barred Plymouth Rocks Exclusively
Ocean, Blue, Thompson Ringlet and Arrowhead strains. Eggs for hatching, chicks for sale. Winners at the 1906 Los Angeles Show.
S B. WOLFE, 1549½ W. 16 St., Los Angeles. Phone West 4901

Buff Orpington and Barred Rock Eggs
for hatching from pure bred stock at $1.00 per 14.
Mrs. Albert Miller,
Tel. East 1767. Station A, Los Angeles, Cal.

White Wyandottes.
High scoring stay white birds. 1st Cock L. A. 1906 show and other winners. Eggs $1.50 to $3. per 13. $10.00 per 100. Mount Holly Poultry Yards, Hollywood, Cal. E. W. Preston, Prop., Sunset, Hollywood, 901.

THE FEATHERLEY FARM ORPINGTONS
Over 30 prizes, specials and cups in Buff, Black and White Orpingtons on 27 entries this year at San Francisco, San Diego and Los Angeles. Bred for utility and egg purposes, as well as prize winning qualities. Eggs from $2 to $3 a setting. Write for free mating list, describing my ten prize yards.
P. L. Harley, Box C, Redlands, Cal.

Poultry and Eggs Wanted
This sign you will see hanging outside of a merchant's store in nearly every town on the coast and it, in a measure, must convince you that there is money in the poultry business, and the
Chatham Incubators
will assist you in making money. Any responsible person can get a genuine Chatham and have SIX NONTHS TO PAY FOR IT—what is the use of you paying out money for an Incubator when you can make it pay over and over again for itself?
I can give you hundreds of testimonials from customers all over the Coast who purchased Chatham Incubators and Brooders last season on our ON TIME PLAN, and are thoroughly satisfied with them. The manufacturers fully guarantee every machine. Write me for our catalogue and some useful hints on poultry raising—it will be mailed to you free.
Geo. W. Foott, Box 2040, Portland, Ore.

Excelsior Egg Food
Is an Egg Producer and a Money Maker. It keeps poultry in most healthy condition.

Excelsior Chick Food
Is balanced exactly right to make Chicks grow and thrive. It will raise 98% of your chicks. Give it a trial with your next brood.

EXCELSIOR

None Others So Good
No others "just the same." Insist on Excelsior or write to us direct. Mention Cultivator.

Del Monte Milling Co.
242 Central Ave.,
Los Angeles, Cal.

Chamberlain's Perfect Chick Feed

"Nothing Just as Good"

"Nothing Just as Good"

World's Chick Feed of To-Day. The only original Dry Chick Feed. All others are worthless imitations. Chamberlain's Perfect Chick Feed was used exclusively at the great St. Louis World's Fair during the 7 months. This the highest compliment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.
CHAMBERLAIN'S PERFECT MASH EGG FEED,
THE WORLD'S GREATEST EGG PRODUCER.
GERMAIN SEED CO.,
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SPECIAL PRICES ON TON LOTS.
Distributing Agents: FREDERICK BROWN, San Jose; CHAS. H. NEARPASS, San Diego; CHANNEL COMMERCIAL CO., Santa Barbara and Ventura.

Veterinary

BY DR. W. J. OLIVER,
318 East Second St., Los Angeles

To the end that this department may be made as valuable to the subscribers as possible, we ask observance of the following: Be sure to state in full the history of the case, location of the disease and the conditions under which the animal has been kept just before and since the disease appeared. Give your name and address, which will not appear in the paper if you so request. No charge whatever is made for such questions as are answered through the columns of the Cultivator, but when an immediate mail answer is wished Dr. Oliver asks an additional fee of $1.00 and will give immediate attention and reply by mail. In such case write Dr. W. J. Oliver, 318 E. Second St., Los Angeles, Cal.

Questions should be in by Monday to be answered in the following Friday's paper.

CATARRH.

I have a mare that is bothered with her eyes. They are inflamed a good deal, the lids are quite red, sometimes they discharge a white matter or pus. What is good for same?

C. F., Hemet.

If there are no unhealthy growths in the eye, you can allay the inflammation by applying the following lotion in the eyes several times a day; or if in sun, cover eyes with cloth saturated with lotion: Boracic acid, 4 drams; Fld. Ext. Belladonna leaves, 2 drams; water, 1 pint. Shake and apply.

PROFITS FROM SPRAYING POTATOES

The profitableness of thorough spraying to protect potatoes against fungus diseases and insect enemies was very strikingly shown in experiments reported by F. C. Stewart and associates, of the New York State Station. The experiments have been made under the direct supervision of the station or in co-operation with growers in different parts of the State. In general thorough spraying with Bordeaux mixture was very effective against blight, rot, and flea-beetle.

While in a few cases all loss from these causes could not be prevented even by thorough spraying, in every case where there was a severe outbreak of blight enough good was done to repay all expenditure, both of money and of time. Generally, spraying was very profitable. Of those whose tests were reported to the station, thirty growers made a net profit of $10,000 from spraying.

In fourteen co operative experiments covering 180 acres, made in 1904, the average increase in yield due to spraying was 62¼ bushels per acre, the cost of spraying was $4.98 per acre, the cost per acre for each spraying, 93 cents, and the net profit per acre $24.86. Similar and almost equally profitable results were obtained in six experiments made in 1903.

Not only were there gains in yield due mainly "to lengthening the time of growth by preventing foliage destruction by late blight," but the sprayed potatoes, being more mature, were of better cooking quality.

Chemical analysis showed about one-sixteenth more dry matter in the sprayed potatoes and one-ninth more starch. Cooking tests confirmed the analysis, as the sprayed potatoes were noticeably more mealy than those not sprayed, and were pronounced of much better quality by all who ate both.

The mixture recommended by the station is Bordeaux of the 1-to-8 formula; that is, 6 pounds of copper sulphate to 50 gallons of water, the acid of the sulphate being neutralized by about 4 pounds of good stone lime. Paris green may be safely added to thoroughly neutralized Bordeaux(mixture and) this combination—Bordeaux and an arsenical poison—has given better results in station tests than any other fungicide-insecticide treatment for potato pests.

If thorough spraying is the object, it would be best to begin when the plants are 6 or 7 inches high and to spray every ten days or two weeks thereafter as long as the plants remain green. If rain comes before any application is dry on the vines the treatment should be repeated, but spraying should not be stopped because "it looks like rain."

Among our advertisers in the ill-fated city of San Francisco was The Paraffine Paint Company, manufacturers of Malthoid Roofing. This Company's factory is located at Paraffin, Alameda County, acros the bay from San Francisco, and was not injured in any way. The temporary main office of The Paraffin Paint Company has been established in the Union Savings Building, Oakland. No advance has been made in the price of Malthoid Roofing or of any other products of that company.

SAVE ALL THE GRAIN YOU GROW!

Let Us Reason Together

BETWEEN seed time and harvest, the grain grower has to trust very largely "to luck."

Nature makes the crop in her own way.

But when harvest time comes he must "get busy."

His profits then depend upon the wisdom with which he harvests his grain.

The wise man begins to get ready weeks before the actual time of harvest.

He knows he can't "trust to luck" then, and he does not want to be caught unprepared.

The first thing he does is to make sure that he has the right facilities for harvesting—the right kind of machines for the proper cutting of his grain.

He wants to get every spoonful of grain that Nature has given him.

He wants to get it with
—the least delay in time;
—the least labor on his own part;
—the least hardship on his horses;
—the least likelihood of trouble and annoyance.

He cannot "trust to luck," and certainly he cannot trust to a poor harvesting machine, a worn-out harvesting machine or an *uncertain* harvesting machine.

How about *you* and *your* harvest?

If you are a businesslike farmer, you will get ready for harvest *now*.

Go to a dealer who handles any one of the International line of harvesting and haying machines.

Get a catalogue, look at the machines, study their construction, and you will *see for yourself* that they are built to meet every requirement.

In *principle of operation*—in design—they embody all that the most skilled mechanical experts have discovered in the past 50 years.

In *materials* they have lumber, steel and iron of the highest grade only—the selected products of the manufacturers' own mines and mills, produced for the purpose of harvesting machine building.

In *workmanship*, it is the product of the best facilities that money and experience can produce.

In everything that makes a machine *reliable*, *trustworthy*, *durable* and *efficient*, the

Champion Milwaukee
Deering Osborne
McCormick Plano

Harvesting and Haying Machines, represent the highest grade of excellence.

These machines have been before the public for a long term of years—some of them for more than half a century. Other machines—scores and scores of them—have come and gone. These have remained, growing every year in popularity Is the stamp of approval placed on a machine by the farmers of America and grain growers of the world worth anything?

Is it not certain that their popularity has been merited? Men do not buy machines year after year, unless the machines do satisfactory work.

To-day the standard harvesting and haying machines embraced in the International line, are *better* than ever before, because they are the products of riper, richer experience, more expert skill, and better and greater facilities for manufacture than were possible in the past.

The manufacturers of these several machines, by close co-operation, are able to own, control and operate their own coal mines, iron mines, lumber camps, coke ovens, steel mills and other sources of supply, producing their own materials, under their own supervision.

They get these materials *when* they want them, not being dependent upon uncertain and fluctuating markets; they get them of the right quality.

By co-operation they are enabled to employ the most expert skill in designing improvements and in the actual mânufacture of the machines.

By co-operation they are enabled to employ extra facilities for the economical production of machines of the highest quality, facilities which are impossible for an individual manufacturer.

By co-operation they are enabled to surpass even their proud records of the past.

—If you expect to save *all* your grain;

—If you want a harvesting or haying machine on which you may depend with absolute certainty;

—If you want to be free from "break-downs," delays, and repair bills:

Take a little time, go and talk to an International Agent.

Inspect the machine he handles and get a catalogue.

It will pay you whether you buy this year or not.

If you don't know an International dealer—write to us for the name and address of one nearest you.

International Harvester Company of America, Chicago.
(Incorporated)
WESTERN GENERAL AGENTS: Denver, Colo., Portland, Ore., Salt Lake City, Utah, Helena, Mont., Spokane, Wash., San Francisco, Cal.

INTERNATIONAL LINE.

Binders, Reapers, Headers, Header-Binders, Corn-Binders, Corn-Shockers, Corn-Pickers, Huskers and Shredders, Corn Shellers, Mowers, Hay Tedders, Hay Rakes, Sweep Rakes, Hay Loaders, Hay Stackers, Hay Balers, Knife Grinders, Gasoline Engines, Pumping Jacks, Manure Spreaders, Weber Wagons, Columbus Wagons, Bettendorf Wagons and Binder Twine.

Queries and Replies

HAY MEASUREMENT.

F. W., Redondo Beach.—Your letter concerning lose hay, does not state what kind of hay you have reference to. There is considerable difference in the packing character of hay, as for example, alfalfa, barley and wild hay. No definite answer can be given you.

IMPORTANT PRINCIPLES OF PRUNING

1. Pruning has varied purposes and is practiced upon very diverse species of plants. In consequence, the same rule cannot be applied in every case.

2. Pruning during the dormant period of the plant tends to increase the growth of wood rather than the production of fruits.

3. Pruning during the period of growth tends to check the growth of wood and increase the yield of fruit. The vegetative and reproductive functions, between certain limits, are reciprocal; increase one and you decrease the other, and vice versa.

4. Pruning of the roots (which is rarely practiced) tends very much to increase the fertility of the fruit trees and reciprocally to check the growth of wood.

5. Pruning ought to be done methodically and regularly, a certain amount being done each year instead of once every five years. This rule is very important.

6. The object of pruning is to repair wrongs, to correct faults of growth and to increase or diminish the fertility of the tree. When there is no evident reason for pruning, do not prune.

7. The high branches should be cut uniformly and also as near as possible to the mother branch. The large scars should be painted with white paint.

8. The best implement for pruning is a pair of pruning shears. A sharp saw will be necessary sometimes, but not often, except in the case of neglected trees. The axe is never employed.

9. Pruning alone will not give satisfactory results. It is necessary to add to it good watering, good fertilizer and good care in all respects.

IRRIGATION PROJECTS

Below will be found a statement showing the States and territories in which the irrigation projects thus far investigated are situated. It will be noticed that the total cost of the projects investigated exceeds the total sum available, but this is not an important point, in view of the fact that the irrigation fund is growing at the rate of about $3,000,000 per year and several years will elapse before any of the larger projects can be completed. The fund will increase with greater rapidity as soon as works are completed, for under the law, one-tenth of the total cost is to be repaid to the government each year, thus creating a fund which may be used over and over again through as many years as the government may desire:

Arizona, Salt River	$ 3,000,000
California, Yuma	3,000,000
Colorado, Gunnison	2,500,000
Idaho, Minidoka	2,600,000
Montana, Milk river	1,500,000
Nebraska (Wyoming), Pathfinder	1,000,000
Nevada, Truckee	3,000,000
New Mexico, Hondo	275,000
North Dakota, Fort Buford	1,200,000
North Dakota, Bismarck	250,000
North Dakota, Trenton	300,000
Oregon, Malheur	2,000,000
South Dakota, Belle Fourche	2,100,000
Utah, Utah lake	1,000,000
Washington, Big Bend	1,500,000
Wyoming, Cody	2,250,000
Total	$27,000,000

HOW GOOD THINGS ARE APPRECIATED.

Demand for a Superior Poultry Food Forces Extension of Facilities for Supplying It.

Nearly all of the poultrymen on the Pacific Coast have noticed the attractive advertising being done by the Acme Mills Company of Portland, Oregon.

It is rather interesting to know how the Acme Mills Company got started in the Poultry Feed business.

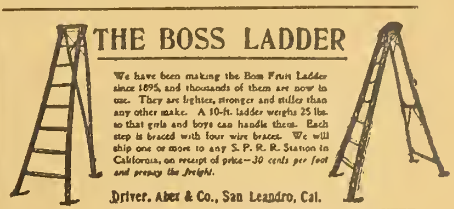
The Ralston Purina Co., of St. Louis, Mo., are the Eastern manufacturers of the great Ralstone Health Foods and some years ago they made arrangements with the Acme Mills Co., of Portland, Oregon, to manufacture these same goods for the Pacific Coast. About a year ago the Ralston Purina Co. saw a chance to put on the market something new in the way of a feed for chickens and after a great deal of experimenting they decided upon the formulas which have since given them this enormous business.

The tremendous advertising being done by this St. Louis mill brought in a great many inquiries from the Pacific Coast (since it is a well known fact that almost every poultryman reads a poultry journal) and the big flaring "ads" which have been flaunted so boldly in the face of the chicken men have not failed to interest the Pacific poultryman, as well as his brother in the eastern states. It seemed quite natural, therefore, that the Ralston Purina Co. should turn to their Pacific Coast cereal manufacturers and suggested that they also take up the poultry feed business.

In view of the fact that the Acme Mill Co. have two of the largest rolled oat mills on the Pacific Coast, they were most admirably situated to take up this new line of business. Anyone familiar with a rolled oat plant knows that in the milling of oats there is a large amount of the oat groats which are bound to break up in the rolling process. These broken oat groats are just as good as the whole oat groats which are used to make rolled oats for the breakfast table. But owing to their smallness in size and uneven grade, the oat miller seldom uses them in making the best grade of rolled oats. Heretofore the Acme Mills Co. has always sold this product to people who are raising chickens, for these tender, little broken groats are just the thing for the baby chicks and in addition to their broken groats their daily output of oat middlings and oat shorts has been very large and a most valuable product for the chicken men.

The oat products which this company is able to secure, has placed them in a very strong position to manufacture the very best grade of poultry feeds that can possibly be turned out, and what has heretofore geen a by-product in the manufacturing business of the Acme Mills Co. is now playing a most important part in one of their chief departments of trade.

With four mills located in the Pacific northwest, this company has an opportunity to draw from almost every grain-growing district on the Pacific Copst, and in order to take care of their poultry feed business, they have built an entirely separate plant, which started to run Oct. 15 and which has been running continuously day and night ever since.


THE BOSS LADDER

We have been making the Boss Fruit Ladder since 1895, and thousands of them are now in use. They are lighter, stronger and stiffer than any other make. A 10-ft. ladder weighs 25 lbs. so that girls and boys can handle them. Each step is braced with four wire braces. We will ship one or more to any S. P. R. R. Station in California, on receipt of price—*30 cents per foot and prepay the freight.*

Driver, Abex & Co., San Leandro, Cal.

Apple Trees

5 to 7 feet, one year old, $20 per 100. Grown in Riverside. Clean and healthy. ***Cornichon Grape Vines,*** $25.00 per 1000.

Jurupa Nurseries, Riverside, Cal.

"LOOK FOR THE BOY"
TRADE
MARK
REX
ROOFING
Flintkote
CLARKE COUNTY AGRICULTURAL ASS'N. SPRINGFIELD, OHIO.
Permanent or Temporary

the greatest value of a building lies in the power of its roof to withstand snow, rain, sun and sparks. Rex Flintkote, as shown on the building in this picture, does this better than roofing that costs many times more to lay. Stringent tests have proven

Rex Flintkote ROOFING

an absolute guard against temperature, acid, alkali, rot, and a protection from fire caused by falling sparks.

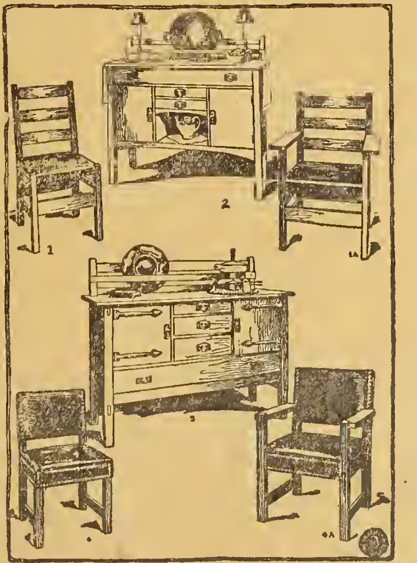
Any farm-hand can lay it perfectly. Cover your poultry house with Rex Flintkoting—roof and sides. Makes a perfect refuge for your birds, both in summer and winter. This means better birds and an increased egg production.

Send for Free Samples

With them you get a book showing all kinds of buildings subjected to all kinds of climatic conditions which are proving the superiority of Rex Flintkote in every point of roof-excellence.

"Look for the Boy" on every roll.

J. A. & W. BIRD & CO.
89 India St., Boston, Mass.
Agents Everywhere.



We Are Connected With the Pacific Purchasing Company

Mission Furniture

No one line of furniture is more favored now than the true Old Mission. No line of Mission furniture on the market compares with the genuine Gustav Stickley furniture. We are agents here for this exceptional line and have a large showing of the finest pieces from this famous craftsman's shops.

Niles Pease Furniture Co.
439-441-443 S. Spring St., Los Angeles, Cal.

FOR CLEANSING MILK CANS, BOTTLES, AND ALL DAIRY UTENSILS
AS WELL AS ANYTHING IN THE KITCHEN OR LAUNDRY **20 MULE TEAM BORAX**
Is Unsurpassed. Sold by all dealers in Packages. ☞Send for Free Sample.
PACIFIC COAST BORAX CO., 114 Sansome St., San Francisco, Cal.

Household Department

OVER THE RIVER.

Over the river they beckon to me,
Loved ones who've crossed to the farther side;
The gleam of their snowy robes I see,
But their voices are lost in the dashing tide.
There's one with ringlets of sunny gold,
And eyes, the reflection of heaven's own blue;
He crossed in the twilight gray and cold,
And the pale mist hid him from mortal view.
We saw not the angels who met him there,
The gates of the city we could not see;
Over the river, over the river,
My brother stands waiting to welcome me.

Over the river the boatman pale
Carried another, the household pet;
Her brown curls waved in the gentle gale,
Darling Minnie! I see her yet.
She crossed on her bosom her dimpled hands,
And fearlessly entered the phantom bark;
We felt it glide from the silver sands,
And all our sunshine grew strangely dark.
We know she is safe on the farther side,
Where all the ransomed and angels be,
Over the river, the mystic river,
My childhood's idol is waiting for me.

And I sit and think, when the sunset's gold
Is flushing river, and hill, and shore,
I shall one day stand by the water cold,
And list for the sound of the boatman's oar;
I shall watch for a gleam of the flapping sail,
I shall hear the boat as it gains the strand,
I shall pass from sight, with the boatman pale,
To the better shore of the spirit land.
I shall know the loved, who have gone before,
And joyful sweet will the meeting be,
When over the river, the peaceful river,
The angel of death shall carry me.

—Nancy Amelia Priest.

How Bessie Bought Her Piano

"Oh, mother, have you really bought it?" and Bessie Greig gazed admiringly at the shining new piano that greeted her eyes as she came home from school. "It is just like Rosy Lee's," she continued, then turning her sparkling countenance toward her father's, her features suddenly lengthened. There was a tired look that she had never noticed there before.

"My child," began her mother sadly, "you know that I get you all that I can afford, and your father is working himself to death, almost, so I don't see how I can buy this for you. There is an agent here, and he pleads so hard to leave it on trial for the neighbors that your father finally gave his consent."

Bessie tried to cover her keen disappointment, but here mother continued, "my child, you have many things that I never thought of having when I was young."

There was a restraint at the tea table that night. However, the young stranger did not seem to notice it. He talked of the virtues of his instrument and told how much a girl could make were she a music teacher. The three Greigs listened intently to the agent's conversation. Mr. Greig watched his daughter closely and saw more than she thought he did.

"Now," began the interesting stranger again, "after your girl has taken lessons, say a year or so, she would improve in music very much and in every desirable way."

"Well," replied her father, grieved at the sight of her tear-stained cheeks, "If Puss wants to raise strawberries, she can have all the money she earns from them, if she'll keep us in berries. How does that suit you, Puss?" and he slyly pulled one of her shining braids of hair.

"There's Brown's old patch," continued Mr. Greig, "that he set out two years ago; it is on his muck garden. He told me today that he will not have time to take care of it because he is on the road so much. He wants to let me have the use of it this year for subduing it. I believe I will accept his offer.

"If Sis 'll care for and pick the fruit," volunteered the oldest boy, John, "I'll trim out the patch and run the cultivator through between the rows."

At this, a happy light crept into Mrs. Greig's tired countenance, for she had always wanted a strawberry bed just like her mother used to have. Berries were too much of a luxury for them to buy often. The agent, pleased with the turn affairs were taking, exclaimed, "I will give you ten dollars of my commission, if you will purchase the instrument for the girl."

Bessie now swallowed the lump in her throat and began to look her sunny self again. Upon departing, the young stranger left an after glow of hope which seemed to reflect itself in every one's face. Bessie found it easy to catch up several old hymns, so that singing became a regular evening feature.

Oliver Bouncer, the school teacher, was a good musician, and to win the good will of his hostess, Mrs. Greig, as well as her daughter's, he gave them regular instructions in music.

One morning in early March, John and his sister went down to look over the "new strawberry bed.' They found that it had been planted on a well fertilized and carefully prepared piece of muckland. But the weeds had not been kept down. As it was dry and sunny overhead, John set fire to the patch and the tall, dead weeds crackled to the snow frosted ground and the hungry flames licked them up.

"I am afraid that will hurt the plants," exclaimed Bessie anxiously. "No," replied her brother as he pointed to the leaves under the thin crust of snow. "They will come up all the more vigorously. Just as soon as we can, we will cultivate out some of the vines. They are a perfect mat. No one has kept the runners cut."

"Is it not a large patch?" said Bessie to her mother, who was now coming down the lane to join her son and daughter in this new interest.

"Oh, mother, this is a happy day," continued Bessie. "Will you not be proud of me when I earn money enough to pay for the piano."

Mrs. Greig was as enthusiastic over the new plan as the young people. "I never saw such vines," she laughed. "We must cut off every runner as fast as they come this spring and transplant them. Brown purchased the choicest varieties, and that is the only profitable way. Parker Earl receives four dollars a bushel for his berries when ordinary kinds are marketing for two dollars and fifty cents."

Sometime later Harry drew enough old straw to cover the plot. The spring was very late; a heavy snow storm fell on the 11th of April. How anxiously Bessie watched for the first bare ground. When the last of winter's wool had disappeared and a warm thaw had commenced, the fair gardener began to hope; but alas, a frost appeared as regular as night.

"I have an idea,' exclaimed John to his sister, and as usual he carried it out. In a day or so the patch was covered with old, rich straw. The cold nights ended in a black frost. In most every patch. every ambitious bud was cut off. In the Greig patch the straw had generated a warm steam so that the berries ripened unusually early.

As the crop elsewhere was almost a failure, Bessie commanded her own price. When she exhibited her first picking, her father exclaimed, "I never saw such berries. The horse and buggy is at your service."

So Bessie arrayed the tempting red berries in the spring wagon and drove merrily to market.

"How much?" asked her mother, surprised at the quick trip, as the girl dashed into the kitchen. Laying down the mail, she opened up her purse, gleefully saying, "So much for our morning's work," and Mrs. Greig, in

The Green-Marshall Co.
Manufacturers
and Wholesale and Retail Dealers in
Paints, Oils, Varnishes and Painter's Supplies
So. Cali. Agents for Berry Bros. Varnishes
550 So. Broadway, Los Angeles 42-44 N. Fair Oaks, Pasadena
Also Long Beach Factory 15th and Alameda Sts., Los Angeles

Bank by Mail

To accommodate the large number of people who keep money at home, or in a local bank where it is earning little or no interest, this bank receives deposits by mail on exactly the same terms as though made in person.

Four per cent baid on Term Deposits. Write for booklet "A" on banking by mail—Tells how it's done.

Security Savings Bank
Fourth and Spring Sts.
Los Angeles, California.

BURN AIR AND SAVE FUEL
You can do it with the
HAGUE IMPROVED DOMESTIC OIL BURNER
It burns more air than any other burner on the market. Can be fitted to stoves, ranges, furnaces, and all kinds of heating systems. Simplest and most economical burner on the market. If you want the most heat for th least money, write for information to
Hague Domestic Oil Burner Co, 810 So. Spring St., Los Angeles, Cal.

Seek Safety First

There is but one absolutely safe and certain way to accumulate money—that is to save it and deposit it in the bank, where it is free from the ups and downs of speculation.

The Board of Directors and Officers of this Bank are men of sound business judgment and integrity—men who have been identified with the marvelous development of Los Angeles and the Great Southwest.

4% Interest Paid on Term Deposits.
3% Interest Paid on Ordinary Deposits.
Interest Compounded Semi-annually
223 So. Spring St., Los Angeles, Cal.

GERMAN AMERICAN SAVINGS BANK
4%

COLONIST RATES TO CALIFORNIA

Santa Fe

Will be in effect every day, Feb. 15 to April 7, and Sept. 15 to Oct. 31, 1906, from all points in the east and south.

Following are a few:

Chicago	$33.00	Kansas City & Leavenworth	$25.00
St. Louis	30.00	St. Joseph & Atchison	25.00
Galveston	26.45	Council Bluffs & Omaha	25.00
Dallas, Houston and Fort Worth			25.00
Nearly all points in Kansas, Oklahoma and Indian Territory			25.00

Colonist rates are also in effect from all points east of Chicago and south of the Ohio river.

Santa Fe Agents in California will take deposits of money to cover price of tickets, which will be promptly furnished to passengers at any point from which these rates are in effect.

California illustrated literature mailed free to any address or may be had from Santa Fe representatives.

Tourist Sleeping Car Lines

Colonist tickets are honored in tourist sleeping cars which run via the Santa Fe to Los Angeles and San Francisco.

her excitement, nearly dropped the pan of gooseberries she was perparing for tarts.

"I always knew John was smart," she exclaimed. "I am proud of you, I am. Four dollars for a bushel of strawberries. I am thankful," she smiled.

At the end of the first week the "girl farmer" was the heroine in the Greig district. "Father," she said Saturday noon, "here are my earnings to date. Please take care of it for me until I am ready to use it."

"I will be your bank," he laughed, slipping the thirty dollars in his money bag.

"I wonder where your father is going, Bessie," asked Mrs. Greig, as she saw her husband drive away. "I have not heard him say," replied her daughter.

"I do believe he has some secret plan," she smiled. "Suppose, Bessie, that we have a shortcake for dinner. John has been asking for one every day. The school teacher is very fond of your baking."

The girl blushed as she meekly replied, "I'll do the best I can."

Just as Mr. Greig drove into the yard the supper bell rang. When he came into the kitchen the others were waiting for him at the dining room table.

"That looks good,' he ejaculated, as he saw the shortcake cooling, while its creamy puffs grew red with rich juice of whipped cream and berries. In a twinkling he had cut a piece and laid it on a plate. Placing something under its edges, he went into the dining room and placed it near Bessie's plate.

"Thank you, father," she laughed, but as she saw something flutter at the edge, she drew out a paper. It was a crisp bank note for $100. "What does it mean, father," she fairly gasped.

Then followed the story of the surprise. "You see I've been to the auction. They had a fine blooded colt for sale. It went cheap. So I added some of my greenbacks to yours and we purchased it. As I was coming through town, Jenkins, the druggist, called to me and wanted to buy the animal. He offered me $200 and I sold it to him. That money is your part with interest."

"Oh, father, thank you, thank you," exclaimed Bessie, as visions of success rushed into her mind.

The strawberry patch yielded so well that the piano was paid for out of Bessie's strawberry money, and it was planned after a year longer at home that she should take a full course at the Boston Conservatory of Music.—Irene Davis, Milford, Mich.

WRITE AGAIN.

Editor Cultivator: I read in The Cultivator you would like letters from young folk, now I am going to write one. I am 14 years old, I would like to know of what books to read. My liking is for animal books, I love birds and domestic animals, what books would you recommend for me on these subjects?—Jennie P., Upland.

Glad to hear from Miss Jennie; she writes a well-composed letter. In the list of writers on animals, Seaton Thompson is probably as popular as any. Clara Hooper on birds is an interesting writer. We would suggest that you write Dr. C. J. K. Jones, assistant librarian Los Angeles Public Library, for his judgment. He is reviewing books all the while. Write again.

.SMALLEST OF OUR ISLANDS..

Editor Cultivator: Will you tell me through The Cultivator something about the island of Guam? Where is it? What grows on it, and who inhabits it? Does it belong to the United States? I want this informa tion for my school class.—T., San Luis Obispo.

Guam, or San Juan, is described in the Brittanica as the most southern of the islands possessed by the United States. It belongs to this government now. It lies east of Manila in the Pacific Ocean. Our government uses it only as a supply station.

The natives are of mixed blood, descendants of Spaniards and Philippine Islanders. They are a peaceable and industrious race of agriculturists and mechanics. Their capital city has over 6,000 inhabitants, which is about two-thirds of the entire population of the island; nearly all reside in the towns, which are very neatly kept. There are a few who own ranches and have rude houses upon them, where their families spend a portion of the time. Only about one per cent of the whole island is under cultivation. It is about 100 miles in circumference.

Rice, corn, sugar cane, beans, tomatoes, indigo, cotton and tropical fruits are grown in abundance. Their meat consists of the flesh of the deer, wild goats, cows and pigs. Flying foxes are numerous; these also are eaten. The domestic animals of Europe were imported long ago, but most of them have become wild.

Centipedes and wasps are common, both indoor and out. There are also small scorpions. The stings of none of these are dangerous, neither are the spiders harmful; they are common, however, and some of them are very large. There are no tarantulas and no snakes.

The people are cordial and friendly; as a rule they are of a good physique and pleasing appearance; their complexion varies from the white of a Caucasian to the brown of a Malay. Most of them have glossy, black hair. They are naturally intelligent and quick to learn. There is very little money on the island and wages are very low. The climate is temperate throughout the greater part of the year.

THE COMMON HOUSE FLY

A most valuable Bulletin has been issued by the State Agricultural College, Pullman, Wash., on the common house fly as a dangerous pest.

House flies breed in fresh horse manure, human excrement, and nowhere else.

They scatter filth and spread disease wherever they alight.

House flies are capable of multiplying into the millions in a month.

The flies parading over food and dishes have every one of them just come from a bed of filthy excrement.

Flies are made so that they have to "spit" first on everything they eat before they can swallow it.

"Fly-specks" are twice voided excrement, first by the horse, then by the fly. Should we tolerate them?

House flies are responsible for more typhoid fever than bad drinking water is.

House flies may be a cause of such disease as consumption, colds, dysentery, and cholera.

One ill-kept table or neglected outhouse is more than sufficient to start a plague of this dirty nuisance, which may be the cause of many deaths.

And lastly, that house flies can easily, simply, and effectively be checked.

Hints for the Cook

SALT-RISING BREAD.

Editor Cultivator: Will you give me a rule for making salt-rising bread? My husband would be happy if he had salt-rising bread, I believe. M. A. C., Lincoln.

Here is one way given to make salt-rising bread:

Take one-third pint new milk, warm. Dont' boil so it will cook the meal. Put one teaspoonful baking powder in the milk; stir in new meal enough to make batter, not too stiff. Heat two or three sad irons hot enough so they will not scorch; put comfort on table; put towel around tin; put irons around it; cover over with comfort, so it will keep warm enough to rise. Set over night. In morning pour in little warm water; stir down and let rise again. Then take one pint warm water, one teasponful soda. When the meal is light put in the water. I use half-gallon tin. Stir in flour enough to make stiff batter. Set in warm water; let rise. Be sure you always have good fresh meal. I think that has a great deal to do with the luck. Meal is awful easy to must, especially in warm weather. When your yeast rises to run over top of tin take one pint warm water, teaspoonful soda and salt, pour yeast in flour, work into a stiff dough; work until nice and smooth; make in loaves; put in warm place to rise light. Take out pans and work again. Let rise. Do not let dough get too light. Bake in moderate oven one hour.

* * *

ORANGE OMELET.

Beat the yolks of six eggs with seven teaspoonfuls of powdered sugar. Whip the whites to a stiff froth and pour the egg and sugar mixture over them. Mix lightly, at the same time adding the juice and grated rind of a large orange. Melt a tablespoonful of butter in a frying pan and tilt it about until the bottom and sides are well greased. Pour in the omelet and cook slowly. When firm and nicely browned set in a hot oven for two minutes, then fold it together, place on a heated dish and serve at once.

* * *

ENGLISH MACARONI PUDDING.

Break one package of macaroni into pieces and cook in boiling water until tender; there should be a generous quantity of water, so that the macaroni does not stick to the pot. Drain off the hot water and blanch the macaroni by washing in a colander with cold water. Next line a good-sized pudding dish with a layer of macaroni, add a sprinkling of salt. American cheese grated fine, tiny lumps of butter, and a few grains of mustard, dissolved in water. Repeat these layers until the pan is full, having the cheese and seasoning on top; sprinkle the top with three or four tablespoonfuls of Worcestershire sauce and fill the pan to the brim with sweet milk. Bake in a moderately hot oven for one-half hour.

REMEMBER THIS.

Never strike a child and send it to bed. If it is necessary to correct it for a wrong it has done do not do so by striking it. A sensitive child will often go to bed and lay awake for hours sobbing out its grief. The damage is often severer to the heart than to the body. Then, too, remember we have no assurance when we say good-night that we shall say good-morning. The angel of death lingers so near us all.

Mrs. Bacon—Where's your husband?

Mrs. Egbert—In the other room, under the sofa.

"What in the world is he doing under the sofa?"

"Whv, he's going to get an automobile next week, and he wants to get used to it before it comes!"—Yonkers Statesman.

SALT LAKE ROUTE

EXCURSION RATES TO EASTERN CITIES.

The Usual low round trip rates to the east will be available this season from California and Nevada stations of the Salt Lake Route on account of various conventions as follows:

New Haven, Ct.—Knights of Columbus—Sell May 24, 25, 26—Return limit August 31. Rates will be announced later.

Denver. Colo.,—B. P. O. Elks—Sell July 17, 18, 19—Return limit Sept. 30. Rate $55.

Minneapolis, Minn.,—G. A. R.—Sell August 7, 8, and 9.—Return limit Oct. 31. Rate $70.

Milwaukee, Wis.,—Order of Eagles—Sell Aug. 7, 8, 9,—Return limit Oct. 31. Rate $74.50.

Also sell July 2 and 3—Return limit 90 days
Sell August 7, 8, 9, and Sept. , 9 and 10—Return limit Oct. 31.

Chicago, Ill.,—72,50—St. Louis Missouri, $67.50.

St. Paul, Minn. $70,00—Minneapolis, Minn. $70.00.

Kansas City, Mo.,—$60.00—Omaha, Nebraska, $60.00.

Council Bluffs, Iowa, St. Joseph, Mo. $60.

Tickets will be sold going via Salt Lake Route and connections and returing via entirely different route, if desired, For full particulars as to stop off privileges, etc., application should be made to Salt Lake Route Agents.

The excellent train service and equipment of the Salt Lake Route and great variety of routes offered affords opportunity for an enjoyable trip. Inquiries from prospective travelers will receive prompt attention from Agents or T. C. Peck, A. G. P. A., Los Angeles.

WITH A SIEVERT OIL BURNER

You can burn 100,000 cubic feet of air with every 130 gallons of oil, this means perfect combustion. To burn more than 100,000 cubic feet of air with 130 gallons of oil, there is a decided loss of heat. To burn less than 100,000 cubic feet of air there is a loss of fuel.
The only safe and reliable burner on the market.
Send for full particulars.

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Full information at 261 S. Spring St., Los Angeles, or from any agent

SOUTHERN PACIFIC

"BACK TO THE COUNTRY."

People flock to the cities today and stay there, not so much because they like to, as because they must. Before the inexorable conditions that dominate men in an industrial age, they are as helpless as chips carried by a great torrent, and the country man who drifts to a great city is like the twig that is washed from the soil far inland and swept by the current to a great ocean. A multitude of people of small means, and not owning land, are now in the cities, not because they find the city more agreeable, but because circumstances force them there. Apparently in each case there is an immediate cause, but careful observation will show that there is one great underlying cause of all the migrations from country to city. There is a great force from which no man is free, that carries away a definite percentage of the people to replenish the cities, which with each new growth acquire the power of absorbing and blighting still more lives. It is not only that the city attracts; the country repels. This is why there has been so little response to the cry of "Back to the Land!" As long as it continues impossible for the people to get back to the land they will stay where they are: in the cities. The country produces people and thrusts them on the cities, but never takes them back. The reason is to be found in the relative opportunities offered to the wage earner. Opportunity is the gate to the cities and lack of opportunity is the insurmountable barrier that excludes a great number of the people from the boon of country life. However much the wage earner may yearn for the freedom and the pure air of the country, his only opportunities are in the city, and there he must stay. A limited number of people can live in the country as farmers; the rest of our population must forever depend on work in the cities or towns for a livelihood. If we are to preserve the vigor of the race, we must provide for the health and happiness of these.

It matters not how much room we have left in the country, if the man who wants to go to the country finds it impossible to get there. We can only get the wage earner back to the land by getting the factory and the office back to the land and there replacing the tenement by homes on the land. Every clerk and factory operative who so desires should be enabled to buy a home-acre convenient to his work. Rural life, within the reach of every wage earner, would place modern industrialism on a sound social and moral foundation that it has heretofore lacked. The menacing problems of present-day congested city life will vanish before the wage earner's fireside and home-garden of the future. And not until modern industrialism has been adjusted in this way to the needs of a healthy moral development of the factory will the democracy of our forefathers have permeated the industrialism of later generations.

Harry Robson, Commission Merchant
and Dealer in All Kinds of Small Fruits and Vegetables. Agency for Los Angeles Berry Baskets. Consignments Solicited.
Harry Robson, L. A Market, Los Angeles, Cal.

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J. D. Robinson Co., Fruits and Produce
Consignments Solicited
Sole Agent for Little Gem Berry Baskets
Stalls 149-150-204-205 Los Angeles Market, Los Angeles, Cal.

H.N.TILDEN & CO.
Wholesale dealers in
PRODUCE
Consignments of Butter, Cheese, Eggs, Poultry, Honey, Grain, Potatoes, Onions and Beans solicited.
209 Sacramento St. San Francisco, Cal.

Alfalfa and Fruit Land

To the Homeseeker. It will pay you to investigate our land in the Gridley Colonies, Butte, Co., California. We offer irrigated land as good as any in California at $50. to $100. per acre with a fully paid water right. Water costs only One Dollar per acre a year. We build the ditch to your land.

Anything that will grow in California can be produced on our land. Soil is a sedimentary loam, very deep and free from alkali. This is the land that grows the Big Oaks. No better land anywhere.

Alfalfa and Dairying, peaches, grapes, English Walnuts and figs pay the best Big fruit cannery, also a fruit drying plant at Gridley. New Electric Railway now building.

Good schools, churches, etc; good roads. A prosperous community, with a bright future.

Write for free printed matter.

Chas. F. O'Brien, Gen. Mgr.
30 Montgomery Street
San Francisco, Cal.

VULCANITE ROOFING

JUST THE THING ALL THE YEAR ROUND

Non-conductive of heat and cold. Does not buckle—lays perfectly smooth. A material which is at once light, strong, durable and cheap, and at the same time water-proof, wind-proof, acid and fume-proof. Also used for covering outside of buildings, floors of warehouses, offices, etc. Requires no paint; is permanent and inexpensive. Comes in various weights.

Samples and price list upon application.

C. SCHEERER & CO.
255 S. LOS ANGELES ST.
LOS ANGELES, CAL.

RUPTURE Absolutely Corrected
OR YOUR MONEY REFUNDED
A written contract goes with it. Write or call and see me and talk it over if you really desire to cure your hernia. A New Principle involved. Long list of prominent people for reference.

Elastic Stockings
Abdominial and Uterine Belts
Shoulder Braces
Deformities Corrected, Special Suspensories for Men, Etc.

A. J. PETTER,
Inventor, Manufacturing and Fitting Specialist in nature assisting appliances for all physical weaknesses. Practicing under my own patents. Oldest establishment in Southern California. 109 Court Street, between Spring and Main Los Angeles, Cal. Lady Attendant. Telephone Home 7102.

A GOOD HUMORED MAN.

A man who can shave himself quickly and easily is likely to be a good humored man. If he comes out of it, on the other hand, with a sore face, he's likely to be surly. These things affect most all men alike. Those who want to come up smiling try to get the conditions right. They don't shave with laundry soap, for instance. He's not only a sour-faced, but a very foolish man who does that. Williams's Shaving Soap would put him in a better humor and give him a better face for keeps. It's pretty near an ideal soap and made just for shaving, nothing else. It will give you, if you are a laundry or toilet soap user, a smoother face and a pleasanter face. If you want to try for yourself before you will consent to be convinced, write to the J. B. William's Company, Glastonbury, Conn. If you write them enclose a two-cent stamp for a free sample.

"Bobbie, have you said your prayers yet?"

"Good gracious, yes! Why, I'm three weeks ahead."—Life.

The Produce Markets

Los Angeles Markets.

Los Angeles, May 2 1096.

Potatoes, beans and onions are commodities which show a marked increase since the San Francisco disaster and a rise may be expected on all staple products.

Butter.

B. of T. Creamery, per roll	.50
Valley Creamery ,fancy	47½@50
Coast	47½

Cheese.

Cal. 3-lb. hand	17½
Cal. Young America	16½
California Anchor, Large	16
Northern	15½16
Domestic Swiss	20
Imported do	28

Eggs.

Eggs, Fresh Ranch	22
Northern Candled	20

Poultry.

Hens (dressed) per lb	15
Young Roosters	19
Fryers	21
Broilers	21
Old Roosters	9
Turkeys	19
Old Toms	19
Young Toms	19
Hen Turkeys	19
Geese	15
Ducks	15

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock:

Hogs, 200 lbs	6
Prime Steers	4½
Cows	3¼
Calves, per lb	5
Sheep, ewes, per head	4.50
Wethers	5.00

Potatoes.

Northern, per sack	$1.85@2.00
Locals, per cwt	1.75@2.00
Locals, new, per lb	4½@5
Sweets, white, per cwt	3.00
Sweets, yellow, cwt	2.50

Vegetables.

Onions, Aust. Brown, cwt	1.50@2.00
Onions, yellow, cwt	2.00
Garlic	7@8
Cabbage, per sack	1.00@1.35
Cauliflower, per doz	.60
Asparagus	8@9
Lettuce, per dozen	20@30
Bell Peppers	20
Chili Peppers	20
Cucumbers. per doz	60@1.23
Radishes, per doz	15
Lima Beans	10@15
String Beans	8@10
Beets	40
Green Onions, doz. bunches	20@25
Carrots, doz. bunches	25@35
Turnips, doz. bunches	25
Celery, per doz	45@50
Peas, per ℔	3@5
Oyster Plant	40
Tomatoes, local	1.00@1.50
Parsley, per doz. bunches	75
Pie Pumpkin, per lb.	01

Citrus Fruits.

Lemons, standard	1.65@1.75
Lemons, choice	1.50@1.60
Navels, extra fancy	2.25@2.50
Navels, choice	2.00@2.25
Grapefruit	1.75@3.00

Fresh Fruits.

Pear, Winter Neils, per box	4@6
Pippins	1.90@2.00
Ganos	2.25@2.75
Permains	1.90@2.00
Dewberries	35
Strawberries, per box	10@18

Dried Fruit.

Apples, evaporated, ex, ch, 10; ch 9½.
Apricots, ex ch, 11; fy, 8½; ch, 7½.
Peaches, fy, 10½; ch, 9.
Santa Clara Prunes, 30-40, 8½, 40-50, 7½, 50-60, 7; 60-70, 6½.

Beans, Dried.

Limas No. 1	5.50
Pinks, fancy	2.50@3.00
Lady Washington	3.15@3.20
Small W hite	3.60@3.75
Black Eyes	6.00

Honey.

Honey, comb frames	13½@14
Comb., Light Amber	12@12½
White, Strained, per ℔	6
Light Amber	5
Beeswax	27

Hay.

Barley, No. 1	14.00@15.00
Alfalfa, Northern	12.00@13.00
Alfalfa, Northern	12.50
Wheat, No. 1	15.00
Tame Oats	16.00

Grain.

Selling prices of mill stuffs f. o. b. cars L. A., in quantity, are:

Rolled Barley	1.40
Bran	1.25
Feed Corn Meal	1.45
Shorts	1.45
Wheat, per cwt	1.65
Cracked Corn	1.40
Oil Cake Meal	2.25
Cocoanut Meal	1.55

CITRUS MARKETS

NEW YORK, May 1.—Thirty-five cars were sold at auction today. The weather is favorable. The market is firm on good stock and prices are low on account of condition.

NAVELS (Vent.)

	Averages
Orchard, or., National Or. Co.	$3.00
Standard. st., National Or. Co.	2.50

THOMPSON IMP. NAVELS (Vent.)

Orchard, or., National Or. Co.	3.10

WASH. NAVELS (Iced.)

Foothill, San Antonio Ex	2.10
Greyhound, ch., San Antonio Ex	2.45
Greyhound, ch., San Antonio Ex	2.60
Stork, xc., San Antonio Ex	2.95
Volunteer, xc., San Antonio Ex.	3.05
Eagle, xc., Riverside Ex	2.65
Square, or., Riverside Ex	2.90
Our Pride, xf., Riverside Ex	3.15
Corona Lily, Queen Colony Ex.	2.50
Greyhound, ch., San Antonio Ex.	2.70
Pet, xc., San Antonio Ex	2.75
Lochinvar, ch., R.-H. Ex	2.95
Gold Buckle, xf., R.-H. Ex	3.00
Quail, xc., O.-C. Ex	3.00
Red Globe, xc., Riverside Ex	3.05
Quail, xc., O.-C. Ex	3.10
Pyramid, xc., G. R. Hand &Co.	2.00
Don, ch., G. R. Hand & Co.	1.50
Peacock, xc., C.C.U., Pasadena	2.45
Rossmoyne, ch., C.C.U., Ross.	2.20
Peacock, xc., C.C.U., Pasadena	1.80
Summit, xc., C.C.U., Redlands	2.30
La Belle, st., C.C.U., Redlands	1.40
Blossom, ch., C.C.U., Redlands	2.30
Lighthouse, st., C.C.U., Redlands	1.90
Laurel, xf., Call Fruit Co.	2.85
Golden Eagle, st., C. C. Chapman	2.55
Old Mission, ch., C. C. Chapman	2.75
Old Mission, fy., C. C. Chapman.	3.25
Golden Harvest, xf., Rubidoux C.	2.75

Cloister, xf., Rubidoux Co......	3.40
Ruth, fy., Rubidoux Co..........	3.10
Red Mountain, xc., Riverside Ex.	2.80
Isis, xf., F. H. Speich & Co.....	2.80
Success, xc., F. H. Speich & Co.	2.90
Clover, xc., Redl. Or. Gro. Assn.	3.00
Rose, xf., Redl. Or. Gro. Assn..	3.35
Rose, xf., Redl. Or. Gro. Assn..	3.10
Carnation, xc., Moulton & Greene	3.00

SEEDLINGS (Iced)

Pyramid, xc., G. R. Hand & Co...	1.85
Stork, xc., G. R. Hand & Co...	2.15
Parrot, xc., G. R. Hand & Co...	2.50
Mission Bells, xc., A.B.Chapman	2.65
Sky-High, xc., A. B. Chapman.	1.70
Sky-High, xc., C.C.U. San Marino	1.30
Peacock, xc., C.C.U., Pasadena..	2.30
Sky-High, xc., C.C.U., San Marino	1.95

MEDITERRANEAN SWEETS (Iced)

West Highland, ch., Cleghorn Co.	2.55
West Highland, fy., Cleghorn Co.	2.90
Peacock, xc., C.C.U., Pasadena..	2.60

GRAPE FRUIT (Iced)

West Highland, ch., Cleghorn Co.	2.30
West Highland, fy., Cleghorn Co.	2.50

BLOODS (Whole boxes)

Pet, xc., San Antonio Ex........	2.90
Pyramid, xc., G. R. Hand & Co.	2.00
Rossmoyne, xc., C.C.U., Rossm..	2.55
Peacock, xc., C.C.U., Pasadena..	2.50

Bloods (Half boxes) (Iced)

Cloister, vf., Rubidoux Frt. Co..	1.70
Volunteer, xc., San Antonio Ex.	1.55
Rossmoyne, xc., C.C.U. Rossm..	1.15

ST. MICHAELS (Half boxes)

Stork, xc., San Antonio Ex.....	1.30

TANGERINES (Iced)

Pet, xc., San Antonio Ex........	1.60

ST. MICHAELS (Whole boxes)

Peacock, xc., C.C.U., Pasadena...	2.45

New Orleans Market.

NEW ORLEANS, May 1.—Three cars were sold at auction yesterday. The weather is warm.

NAVELS (Iced)

Hunter, st., A.C.G. Ex..........	2.40
Pointer, xc., A.C.G. Ex.........	2.40
Greyhound, ch., San Antonio Ex.	2.65
Stork, xc., San Antonio Ex.....	2.75
Golden, st., Riverside Ex.......	2.55
Square, or., Riverside Ex........	2.75

Foreign Lemon Sale.

NEW YORK, May 1.—Twenty-three thousand boxes of Sicily lemons were sold at auction here today. The stock was in poor condition. The market is very strong. The next sale will probably be held on Friday, but the quantity to be offered is uncertain. Fancy 300s brought $3.00 to 3.50; choice 300s brought 2.60 to 3-10; fancy 360s brought 3.10 to 3.70; choice 360s brought 2.75 to 3.25.

Lemon Sale at Boston.

BOSTON, May 1.—Twenty-two thousand boxes of Palermo lemons were sold today at auction. Fancy 300s brought from 3.25 to 3.50 while choice grade 300s brought 2.65 to 2.85. The ranges on sizes 360s were the same as on 300s. Twelve thousand boxes of Messina, Catania and Sorrento oranges were also offered today. Whole boxes brought 2.80 to 3.30 while the half boxes brought around 1.15.

COUNTY FARM ORANGES.

We are glad to notice that the returns from some property belonging to the County of Los Angeles are so satisfactory. The orange crop of the County Farm this year, to date, has returned $10,500 with three cars of Valencias yet to be shipped. It should be very gratifying to the tax payers to find that not only do they own such a valuable property, but that it is producing such a splendid income.

In relation to this subject a few figures may be interesting. The returns from the 2700 orange trees constituting this orchard for several years past have been as follows:

1903..................	6542.09
1904..................	4073.56
1905..................	6567.21
1906................	10,500.00

with three carloads of Valencias yet to be shipped.

In 1904 some 300 trees of poor varieties were rebudded to navels, reducing the crop that year. In 1905 the bearing trees more than made up the deficiency and in 1906, the present year, the buds are bearing and with good prices the above satisfactory results were obtained.

This demonstrates that although property may be "Public," and owned by the County, it can be made to produce and be as profitable as the best private orchards, if conducted by practical men along good business lines.

JAPANESE PERSIMMONS

Paper read before Alabama State Horticultural Association at annual meeting January, 1905:

History. In Japan the Japanese persimmon, or kaki, as it is called by the natives, has grown wild from time immemorial. It is very highly prized by the Japanese who have been cultivating and improving it for several centuries. With them it is what the apple is to North America. It is their national fruit. No tree is more admired by them or given more attention. It is a conspicuous tree in the landscape of the "Island Empire."

In appearance it is very similar to our well known, wild varieties, except it does not grow so large. The first attempt to introduce the Japanese persimmon into this country was made by the United States Department of Agriculture in 1863.

This department imported and planted a large number of seed which germinated and grew well, but which were killed by cold during the first winter of their existence. The same process was repeated the second year with the same results. Nothing more was done towards its introduction until about ten years later, when the department imported a large number of trees and distributed them throughout the south. About the some time the Rev. Henry Loomis of California, received a shipment of trees. These, too, were disseminated through the south. He also sent out numbers of descriptive circulars with full sized, brilliantly colored varieties which astonished and fascinated fruit growers to such an extent that happily they were induced to try this most interesting pomological novelty.

VEGETABLE MARROW

These squash varieties are not widely known in this State, although highly esteemed by residents of European birth, who understand the best methods of preparation for the table. They have a characteristic flavor quite different from ordinary squashes. In order to get the pleasant flavor, however, it is necessary to gather the fruit while still young and green, before the seeds mature (experience quickly teaches just when). The English method of treatment, which brings out the true marrow flavor, is to cut into longitudinal sections, pare and take out the seeds, drop into boiling salted water and boil until tender; drain and serve, without mashing, with a white sauce dressing. Ripe vegetable marrow may be boiled in the shell; when tender scrape from the shell, mash and season as with summer squash.

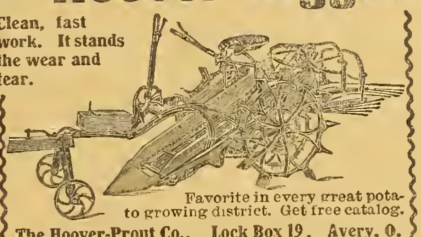
AN ENVIABLE RECORD.

The Good Book says that the years of a man are three score years and ten and it intimates that he will have trouble afterwards, but our good friends, J. A. Bird & Company, of Boston, manufacturers of Rex Flintkote Roofing, are entering upon the seventieth year of their business life with all the ginger of youth.

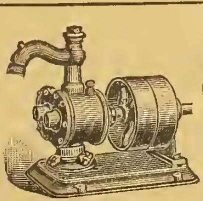
It is rather unusual for a firm to remain for three generations in one family, and it gives that firm an important advantage as it keeps their policy of business constant from generation to generation. The excellent reputation of this firm throughout the world is reflected in the Rex Flintkote Roofing which they manufacture, and the reliability of the house is the best guarantee that one could have of the reliability of their goods.

A postal card sent to J. A. & W. Bird & Company, of Boston, will bring full information regarding Rex Flintkote Roofing and samples, which will be of value to anyone who is going to put up or repair any farm building.

THE Hoover Digger
Clean, fast work. It stands the wear and tear.



Favorite in every great potato growing district. Get free catalog.
The Hoover-Prout Co., Lock Box 19, Avery, O.

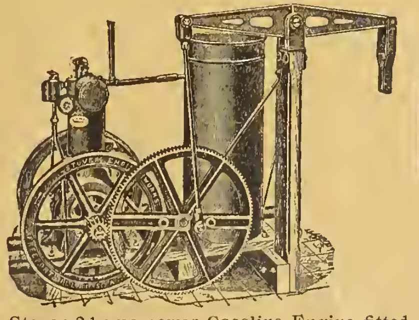


Gould's Rotary Pumps

Red Cross Wind Mills

Woodin & Little

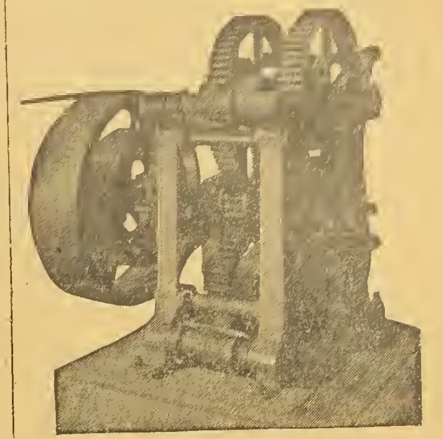
Pumps for all purposes, Pipe Fittings, Brass Goods, Wind Mills, Gasoline Engines. Tanks, Garden Tools. Send for Catalogue.
209-211 Market St. Department A
San Francisco, Cal.



Stover 2 horse power Gasoline Engine, fitted with electric sparks, high grade, easy to start; oh, how simple.

OPIUM and Whiskey Habits cured at home without pain. Book of particulars sent FREE. B. M. Woolley, M.D., Atlanta, Ga., 103 N. Pryor St.

The Pomona Pump



The New Pomona Pump is now being manufactured with machine cut gears and machine cut steel or bronze pinions. The pump fitted with this kind of gearing runs as smooth as a clock and there is absolutely no noise or vibration. The company have recently taken contracts for installing their largest sized pump with this class of gearing for the Artesian Belt Water Company of San Dimas, Western Water & Power Company of Glendora and other large irrigation companies. They are required to furnish these pumps with cylinders up to 12 inches in diameter and 72 stroke which has capacity of over 60 Miner's inches of water. The valves are made entirely of phosphor bronze with ground metal taper seats so there is very little obstructiin to the water in passing through them and it is impossible to clog them with sand. These, in connection with machine cut gears, in the pump head, make a strictly high grade pumping outfit and the best by a long ways of anything on the market today.

This head and valves are both protected by United States patent. Beware of infringing as both manfacturer and user are liable.

The company has recently installed one of their latest Improved heads for the Santa Anita Land Company, a subdivison of the Baldwin Ranch. Below is what the owners have to say about it:

"The new 38 pump you installed for us on our tract on the E. J. (Lucky) Baldwin Ranch is giving us satisfaction in every way. We think we have the very best that money will buy. Both as regards to pump, material used and installation. We made an excellent change when we removed the pump we had been using and installed your make."

We have pleased these people and there is no reason why we cannot please you.

Send for catalog to

The Pomona Manufacturing Co.
Pomona, California

Success Pumping Portable Traction **Engines**

Gasoline and Distillate

Quality the Best. Prices the Most Reasonable.
Write for Terms and Descriptions.
Agents Wanted.

International Gas Generator and Power Company
717 N. Main St. - Los Angeles, Cal.
Mention Cultivator

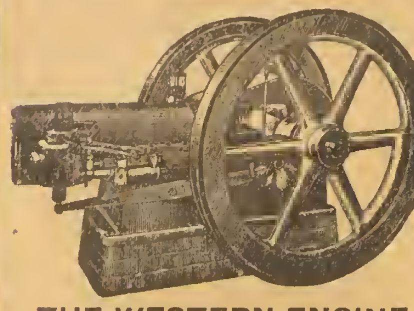
THE WESTERN GAS ENGINE

"From Factory Direct to User"

Designed and built by Western experts for Western use with Western fuel. In construction the Western embodies many original, yet practical ideas, which place it in advance of any other make on the market today. The simplest, strongest and best engine for

Irrigation, Power and Electric Plants.
Any Size from 5 to 500 H. P.

Burns cheapest fuel—gasoline, distillate or crude oil—with a saving of 20 to 40 per cent over any other style. Send for Illustrated Catalogue fully describing every detail of construction; tells how and why the Western excels all others; it gives the facts—the proof. Learn what Western engines are doing for others. Send your name today—ask for latest issue, A6.



THE WESTERN ENGINE
Maximum Power at Minimum Cost

WESTERN GAS ENGINE CO.
908-932 N. MAIN ST. LOS ANGELES, CAL.

RUBEROID ROOFING

The peer of all with 14 years' record for durability and efficiency.
Cheapest because best.

BLAKE, MOFFITT & TOWNE
Both Phones 679 242 to 248 So. Los Angeles St., Los Angeles, Cal.

NATIONAL WOOD PIPE CO.

MADE FROM CALIFORNIA REDWOOD OR SELECTED PUGET SOUND YELLOW FIR **WOOD PIPE** WOODWARD PATENT MACHINE BANDED PIPE
WHEELER PATENT CONTINUOUS STAVE PIPE
BORED WOOD WATER PIPE

Puget Sound Office, Olympia, Washington
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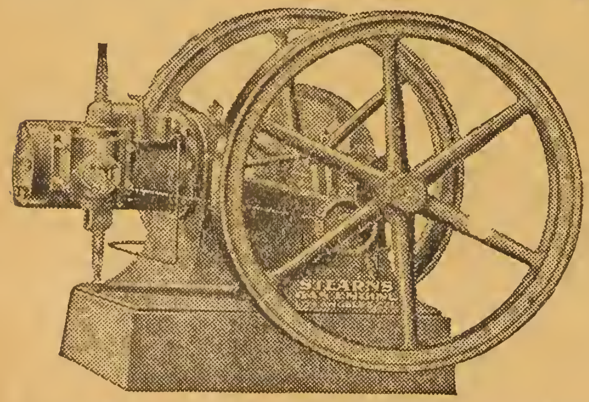
A booklet, "The Whole Story About Wood Pipe," mailed free upon request

STEARNS GASOLINE OR DISTILLATE ENGINE



Has many points superior to any other engine.

Hundreds in Use

Every One Satisfactory

Built for California cheap fuel.

For further information, write

STEARNS GAS ENGINE WORKS 1001-3-5 NORTH MAIN STREET
LOS ANGELES, CALIFORNIA

NEW CENTURY HAY PRESSES

'PULL POWER NO PLUNGER TO BREAK.

7-inch Step-Over.

Tying chamber 18 inches off ground.

Stands up to its work, no taking off wheels.

STRONGEST PRESS ON EARTH. ALL IRON AND STEEL.

Constructed especially for heavy California hay baling. Write for proposition to ship you a New Century on **10 Days Free Trial.** Sold on easy payments. Shipped direct from warehouse in Los Angeles. For full particulars address

A. C. TURNER, 624 WEST TENTH ST., LOS ANGELES, CAL., or
WESTERN STEEL & WIRE CO., 202 E. OSAGE AVENUE, KANSAS CITY, KANS.

NO, THIS IS NOT AN ARTESIAN WELL, BUT

AN IRRIGATION PUMPING SYSTEM
SUPPLIED BY
S. J. SMITH MACHINERY CO.
POWER PLANTS, PUMPING MACHINERY AND WATER SUPPLY GOODS 212-214 S. Los Angeles St., Los Angeles, Cal.

Caustic Soda 60%, 70%, 74% 76%, 78%, 99%. Powdered and Solid. Full information cheerfully given. All goods guaranteed.

M. Bettman Co. 121 California St. San Francisco

U. S. Carbolic Insecticide

Trade Mark **TREE WASH** Registered

To grow fruit profitably must become a study with the grower, and to raise it successfully he must be constantly watching and guarding against the pests that attack both fruit trees and vines.

This insecticide requires no heating or boiling of water, but is used simply by diluting with cold water, assimilating perfectly, requiring no agitation, forms no sediment, no clogging of nozzles, and will not injure the hands in the least, but will, like carbolic acid, heal and cure sores if on them. It is cheaper than any other preparation or method, considering the results obtained.

The best fertilizer to the trees. The one that leaves them clean and healthy. The one that brings results and pleases. The easiest prepared for spraying.

Information and testimonials on application to

W. P. FULLER & CO., San Francisco
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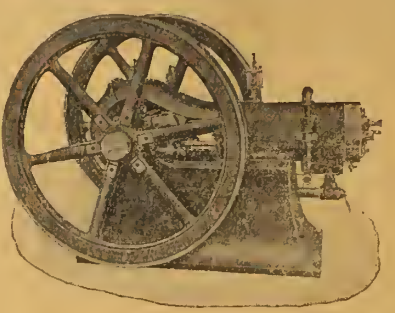

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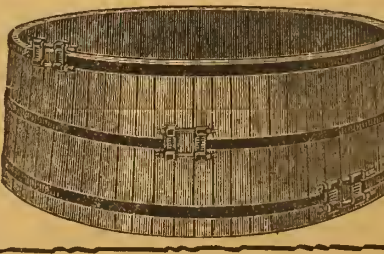

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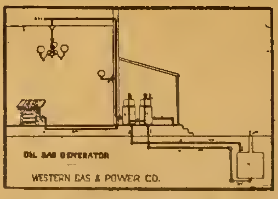

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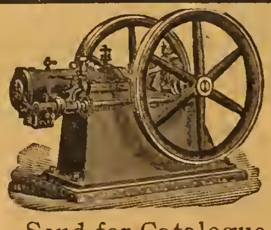

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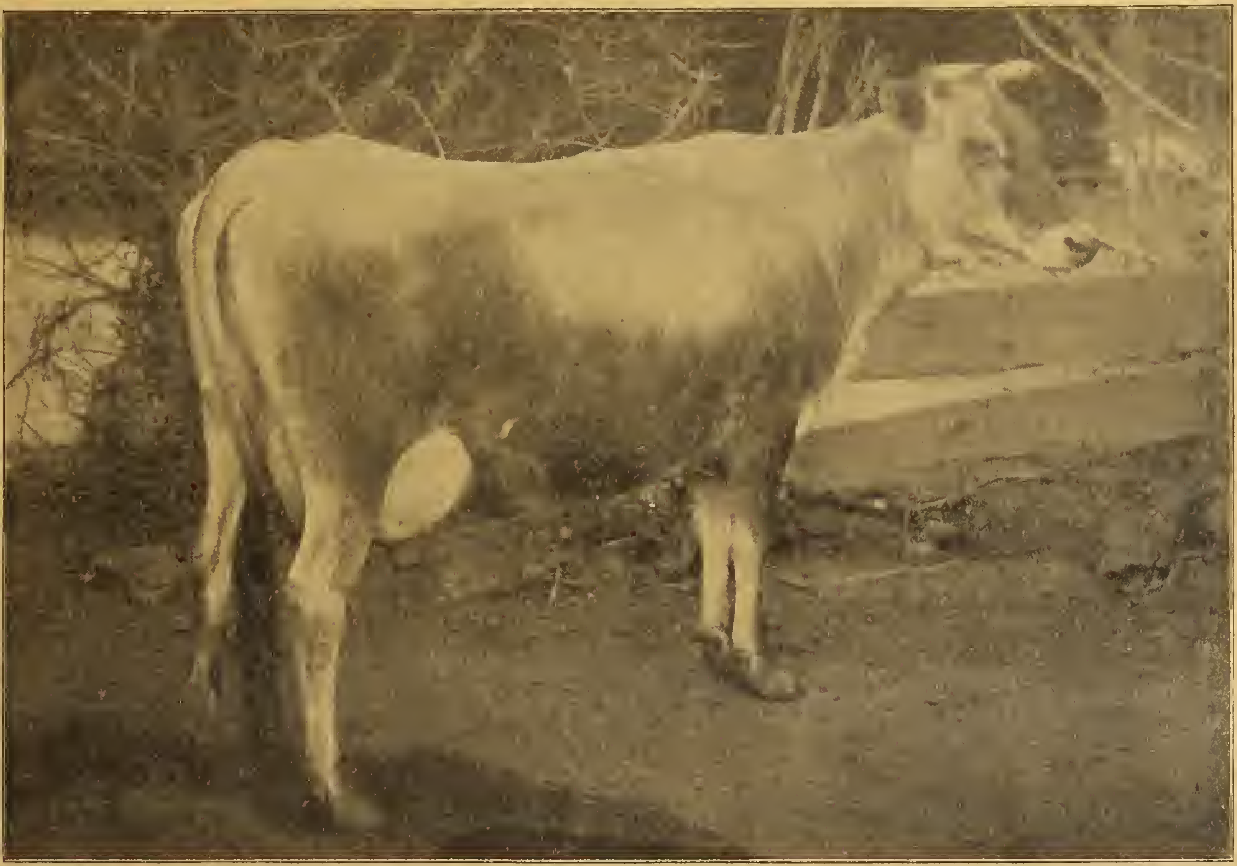
CALIFORNIA CULTIVATOR

DEVOTED TO AGRICULTURE IN ALL ITS BRANCHES

LOS ANGELES MAY 11, 1906 SAN FRANCISCO



A TYPICAL REGISTERED JERSEY

The Jersey cow is as much an art product as is a picture, a symphony or a poem, because she has been created by man by the application of nature's laws as an expression of his ideal; and because she possesses beauty in just so far as he has obeyed those laws. Art is a means of expression and cattle breeding is such a means. The Jersey shares the peculiarity of painting in that each cow is an original creation which can not be duplicated, though under extremely favorable circumstances it may be copied.

HOW SHOPPERS MAY SAVE MONEY.

A chance to save the lady shoppers money in their trading is what Weinstock Lubin & Co. offer to Cultivator readers this week. This big mail order house, located at Sacramento, is one of the first on this coast to take up this satisfactory method of shopping. Its reputation for honesty and square dealing is such that shoppers may feel perfect confidence in entrusting their orders to it and getting goods which will not only be honest measure but the best which the market affords.

To facilitate the best selections, a fine, large catalogue is issued which will be forwarded on application. Not only that, but samples will be forwarded for more perfect selections from which one will have the best opportunity to choose goods which will be entirely satisfactory.

The mail order system of shopping is becoming every day more general with shoppers who are not located in the large cities, or even there where the best of selections are sometimes not in position to offer the advantages of the immense stock which these large mail order houses carry, in addition to the low prices which it is possible to make from the large jobbing purchases which such houses are able to make.

All that Messrs. Weinstock & Lubin ask is to examine a few examples of the savings made by this shopping. They give a number of tempting offers which will appeal to our lady readers who we trust will not fail to see that the firm guarantees the satisfaction of purchasers.

We think this house is worthy of a trial order which will soon determine the most skeptical whether it will pay to buy goods at lower prices than from the ordinary country store and at the same time have the advantage of selecting from a large, up-to-date, well selected stock.

The office of the Mountain Copper Company, in San Francisco, was destroyed by fire and they are now located at 1020 Fourteenth street, Oakland, California. Their reduction works at Keswick and Point Lewis, near Martinez, were not injured and they are in just as good condition as ever to furnish their chemical fertilizers. Write them at their new a dress for particulars, as they ma specialty of fertilizers for fruit, ce eals, vegetables, etc. All inquiries and correspondence will be promptl answered by addressing them abov

A Letter from J. M. Bull at King City, Cal

J. M. BULL.

IS THERE ANYTHING IN POULTRY?

There are some that say: "There is nothing in poultry." Why, I knew a man, who two years ago was broke, and lost his home, but, today, he is one of the wealthiest men in King City. That is Nick Bray, with 900 of the prettiest Brown Leghorns in California. He ordered $74.00 worth of Coulson's Feeds from the carload I sold at King City.

$300.00 FOR FEED—$900.00 WORTH OF EGGS.

During the past year, (1905), Mr. J. Christensen, of San Luis Obispo, Cal., fed his flock of 300 laying hens on COULSON'S MASH EGG FOOD, every day, and the total cost of all feed used, during the year, was $300.00. He sold during the year $900.00 worth of eggs, making $600.00 profit.

5 WEEKS' OLD CHICKS—3½ CENTS EACH.

Mr. Christensen hatched out 312 chicks, and he fed them entirely on COULSON'S GROWING CHICK FOOD, dampened with a little milk.

He purchased 5 sacks of it, for which he paid $11.75. When the chicks were 5 weeks of age, he had 310 good, strong, healthy chicks, only two having died; and out of the 5 sacks of feed, he still had a bucketful left. So the cost of feeding them COULSON'S GROWING CHICK FOOD up to 5 weeks of age, was about 3½ cents per chick, and raised 310 out of 312.

WHY YOU SHOULD FEED COULSON'S FEED.

Eight pounds of COULSON'S MASH EGG FOOD makes a meal for a hundred hens, and it takes nearly twice that amount of inferior feed, such as bran, shorts, chop feed, etc., which do not contain nearly so much protein.

"Can feed 1500 hens—'**COULSON'S**'—FOR LESS MONEY than what it costs to feed only 1100 hens on the other feed."

For instance: Mrs. Marks, at Salinas, fed 1500 hens all last year on COULSON'S EGG FOOD and it did not cost her as much as it did to feed 1100 hens the year before on common feed. That was proof that **"COULSON'S"** goes the farthest; therefore, is the cheapest. She now buys COULSON'S MASH EGG FOOD in one-half ton lots, about every two weeks. She gets it at Mr. F. Blackie's store at Salinas.

The COULSON'S Feed is so much richer, and a more solid feed. so that the hens cannot eat nearly so much of it. All the poultrymen know this—those who have fed it. The hens NEED the rich feed and if they are fed COULSON'S, they do not eat so much of the other feeds, so that is the **SAVING.**

Then, if you get only two eggs extra a month, that would pay for COULSON'S FEED, and from the other cheaper feeds, you would not get enough eggs to pay for the feed. You know a cow gives more milk and richer, when fed on a good, mash feed; so does a hen make more eggs, when fed on the right kind of feed that **HELPS TO PRODUCE THE EGG.**

Some poultrymen are mixing cheap Blood Meal, that is half tanbark, to make Egg Food, which they can readily see if they will only LOOK at it. It costs 4 cents a month to feed a hen COULSON'S MASH EGG FOOD and it also costs 4 cents a month to feed the cheaper feeds, as you have to feed so much more of them.

Then, two eggs extra would pay for COULSON'S FEED, and many months afterwards, you will be realizing the advantage of feeding **COULSON'S** Feed, for you will be getting so many more eggs in the late Fall, when eggs are worth 50 cents a dozen.

OVER $100.00 IN 3 WEEKS FROM 350 HENS.

Last November, when I was at Hanford. I saw a good illustration: One poultryman with 300 hens did not feed any of Coulson's Feed—he was then getting only 4 eggs a day.

Mr. V. E. Hill, another poultryman, had 350 hens and feeds **COULSON'S** EVERY DAY, the year round, and at that time eggs were bringing 53 cents a dozen at Berkeley and San Francisco and Mr. Hill sold $117.30 worth of eggs in three weeks, and there are four and a half weeks to each month. So you can see that the man who feeds COULSON'S FEEDS, makes a whole lot more money during the year.

IT'S THE SUCCESSFUL POULTRYMEN WHO USE COULSON'S FEEDS.

Men like Mr. Freeman, with 5000 hens, and all of his brothers, making from $2000.00 to $5000.00 a year, are men of from fifteen to twenty years experience, and only buy goods from which they will get good results. They buy carloads of COULSON'S EGG FOOD.

Mr. De Rezendes, who feeds nearly four carloads a year of Coulson's Feeds, made enough money by it, to enable him to buy another large ranch of 300 acres, which he will also st up with thousands of chickens will feed them on Coulson's Feeds. H buys COULSON'S SPECIAL DRY CHICK FOOD by the wagon load, three tons at a time, and the EGG FOOD, 300 sacks at a time.

Also Mr. Gaston, with 3500 hens, has fed 3000 bags of COULSON'S Egg Food during the past three and a half years, and uses tons of COULSON'S SPECIAL DRY CHICK FOOD every Spring. See illustration. Their word is worth as much, or more than that of the many smaller men in the business.

OVER $1000.00 WORTH OF EGGS FROM 400 HENS.

Mr. Selecman, a farmer, who owns a large wheat ranch near Elmira, Cal. started to feed his hens COULSON'S EGG FOOD two years ago. According to a careful record kept during the year 1905, he sold $1146.15 worth of eggs from a flock of 400 hens; and after paying for all feed, including some $200.00 worth of COULSON'S EGG FOOD, he cleared a profit from these hens of nearly $700.00.

$4.00 A HEN.

Why, Henry Graff, who was elected president of the Pacific Coast Poultry Association, and who has 2000 fine White Leghorn hens, feeds COULSON'S MASH EGG FOOD every day, and the last year his hens laid nearly $8000.00 worth of eggs, or about $4.00 per hen.

The Coulson Co. has over 80 carload agencies in California, handling the feed in carload lots, and hundreds of stores handling the poultry foods in smaller quantities. This is proof that thousands of poultrymen are feeding Coulson's Feeds and you should be feeding them too.

INTELLIGENT MEN, that's the kind that feed their chickens COULSON'S FEED and make money.

Geo. W. Gaston's mammoth poultry farm eight miles from Petaluma, Cal. Here is the section of the country where the world's largest poultry farms are located. Here we see poultry farms that are a mile square and covered with poultry houses, occupied by thousands and thousands of chickens. The laying hens on the above place have been fed on COULSON'S MASH EGG FOOD once a day for THE PAST FOUR YEARS, and during this time, Mr. Gaston has purchased for these hens, more than **3000 bags** of Coulson's Egg Food; besides tons and tons of Coulson's Chick Food for the little chicks.

35c per hen PER YEAR is what it cost Mr. Gaston to feed them every day on Coulson's Mash Egg Food; $1.10 per hen including all grain, etc.

Mr. Gaston is a practical and experienced poultryman, having raised poultry for the last twenty-five years. He is the owner of the above ranch, besides interest in other farms. The fact that Mr. Gaston uses Coulson's Mash Egg Food exclusively for his hens with such good results, speaks well for the merits of Coulson's Feed. Mr. Gaston is now raising 6000 little chicks on Coulson's Special Dry Chick Feed.

ASK YOUR DEALER OR WRITE TO

COULSON POULTRY & STOCK FOOD CO., PETALUMA, CALIFORNIA

CALIFORNIA CULTIVATOR

ol. XXVI—No. 19 LOS ANGELES, CAL., FRIDAY, MAY 11, 1906 Subscription $1.00 a Year

he Renovation of Worn-Out Soils

By W. J. Spillman, Agriculturist

For nearly two centuries after the advent of the white man in America farming was confined to a narrow strip of land adjacent to the Atlantic; crossed the Alleghenies, beginning the population was sparse, and when a field became worn out the nearby woodland was cleared. As population increased, the younger generation the tide of migration which has moved westward until the present time, but which has now occupied nearly all of the easily available lands from the Alleghenies to the Pacific. In its westward course this advancing host farmed virgin soils for a century. The marvelous development which has occurred in this country during the past century was made possible by the abundant fertility of the new lands brought under cultivation and the consequent abundance and cheapness of farm products.

So long as plenty of fertile land remained unoccupied in the West the exhaustion of the older land in the East was a matter of concern only to the farmers of the older settled communities. But now we are confronted by the necessity of tilling soils whose ability to produce satisfactory crops has been greatly impaired. There is even a perceptible flow of immigration from the high-priced lands of the Middle West to the depleted lands of the Atlantic seaboard. This has been made possible by the recent remarkable development of agricultural science, which has demonstrated the feasibility of restoring fertility to exhausted soils. Agricultural science is also responsible for the present movement from the city to the country. The conditions of country life have been alleviated; the farm has been made attractive by adding the zest of intellectual occupation in the splendid agricultural literature of the day; and farming, when intelligently followed, has been made profitable, even on lands that were formerly unproductive.

* * *

Differences in Natural Fertility.—There is a vast difference in the natural fertility of soils. Some do not produce well from the start unless special attention is given to making them productive; others produce large crops for a short time and then rapidly diminish in fertility; while others, known as strong soils remain productive for many years without attention to their fertility. But even the strongest soils will wear out in time unless they are intelligently managed. Curiously enough, as the tide of migration went westward in this country, the settlers found soils of increasing natural fertility as they went, and in each new settlement the opinion prevailed that the soil was inexhausible. But even the strong soils of the western prairies have now been cropped with grain and abused by improper methods of tillage until they show signs of approaching exhaustion.

Fortunately, while the rich soils of the West were being depleted of their fertility, the development of agricultural science was going forward with rapid strides, and, while there is much yet to learn about the soil, we now know, in a general way, the steps necessary to build up and maintain soil fertility. In fact, soils that were originally only moderately productive and that have been rendered almost sterile by improper methods of farming, can be made richer than they ever were.

* * *

Nature of the Soil.—In order to understand the methods necessary for restoring worn-out soils, let us consider what occurs in a fertile soil that is growing a large crop. Imagine a cubic inch of ordinary field soil magnified into a cubic mile. It would then present very much the appearance of a mass of rocks varying from the size of a pea to masses several feet in diameter. Scattered among the rock masses would be many pieces of decaying plant roots and other organic matter, resembling rotting logs in a mass of stone and gravel. The masses of organic matter would be found to contain large quantities of water, and to somewhat resemble wet sponges, while every mass of rock would have a layer of water covering its surface. The open spaces between the solid masses would be filled with air.

American Wonder Pea

If a crop were growing on this soil, its roots would be found threading their way among the masses of rocks and decaying roots, and pushing these aside by the pressure exerted by the growing root. From the surface of the growing root, near its tip, small hollow threads (the root hairs) extend into the open spaces and suck up the water covering the rock particles. The root hairs are not open at the end; they absorb the water through their walls. The plant food is dissolved in this water, but is usually present in exceedingly small quantities. While the plant is growing a constant stream of water flows up through it and evaporates at its leaves. For every pound of growth in dry matter made by the plant, from 300 to 800 pounds of water flow up through it.

The plant food substance dissolved in the water may be divided into two classes according to their ultimate source.

* * *

Mineral Plant Food.—Plants in their growth make use of thirteen chemical elements, nine of which they secure directly from the soil. These are called the mineral plant foods; they are phosphorus, potassium, calcium, magnesium, sodium, iron, silicon, chlorin, and sulphur. We have already seen that the soil consists mainly of small particles of rock. The rock particles are of many kinds, but nearly all kinds contain more or less potassium, calcium, phosphoric acid, etc. Every year the soil water dissolves off a thin surface layer from each particle. Plants appropriate this water and thus secure mineral plant food.

Many generations of plants have thus been collecting their small toll of food from the soil and storing it up in their tissues. The amount of plant food made ready for plant use during each growing season through the slow solution of the mineral particles of the soil doubtless supplemented to a considerable degree by the same kinds of material set free from the organic matter also found in the soil—that is, the mineral matter originally secured from the dissolved minerals, but built into plants during some former season, may again be used by other plants when the old matter is given an opportunity to decay in the soil. These foods derived directly from the mineral matter of the soil and indirectly from it through the growth, death, decay, and return of former crops are also supplemented in many cases by the application of mineral matter in the form of commercial fertilizers.

* * *

Nitrogen Compounds.—In addition to the nine elements already mentioned, the growing plant requires four other elements, as follows: Hydrogen, which it secures from water (water is a compound of hydrogen and oxygen); oxygen, which it secures partly from water and partly from air; carbon, which is secured from carbonic-acid gas in the air; and nitrogen.

Nitrogen is in many respects the most important of all the plant food elements. It is not found in appreciable quantities in the rock particles of the soil. Ordinary plants depend for their nitrogen entirely on decaying organic matter. As decay proceeds nitrates are formed from the nitrogen contained in organic matter. The nitrates are exceedingly soluble, and unless soon made use of by growing crops they are washed out of the soil. Nitrogen is therefore usually the first element to become exhausted in the soil.

Fortunately, there are certain species of bacteria that can use atmospheric nitrogen, of which there is an inexhaustible supply. One family of plants—the legumes—has learned to exchange work with these bacteria, and these plants are thus easily supplied with an abundance of nitrogen in a form they can use. When these nitrogen-fixing bacteria are present in a soil on which a leguminous crop is growing, the bacteria invade the roots of the legume and live there. Their presence is usually made manifest by swellings—the so-called tubercles—on the roots of thrifty plants of clover, alfalfa, beans, and other legumes. Nitrogen from the soil air filters into the roots, where the bacteria appropriate it, manufacture an abundance of nitrates, and give a portion to the plant in exchange for starch. The tissues of leguminous

Continued on Page 441

Deciduous Fruit Culture

BY J. W. MILLS, POMONA, CAL.

GROWING ALFALFA

Editor of Cultivator:—Would it be practical to undertake to raise alfalfa on No 1 land where there is no irrigating ditches? The water supply would have to be procured from wells at a depth of 40 feet. I have 480 acres of first-class land in Tulare County outside of the irrigating districts which is of hogwallow formation I am anxious to put to alfalfa. I am not posted enough in the business to know if it would be advisable to undertake to grade it and put down wells, using a portable engine to pump from the different wells. I have read a great many articles in the Cultivator on alfalfa raising that sound very flattering. Can you give me any information on the subject? WM. T., Berryessa.

It will pay to raise water forty feet to irrigate alfalfa where the land is capable of being flooded. Where hay is cheap, we would be inclined to turn our attention to hog raising. By devoting part of the land to barley and allowing your hogs to harvest the alfalfa by turning them from one field to another and allowing the hogs which are being "topped" off for market to have first chance at the barley fields and allowing the stock hogs to clean it up, there will be comparative little expense in caring for such an enterprise. Of course you would need to harvest some grain to carry your stock hogs over certain periods when feed is scarce. The expense of leveling hogwallow land for irrigating alfalfa might be too expensive to render it profitable. It depends on the degree of undulations. There is hogwallow land and hogwallow land. We never yet have seen what we would call first class land, though there may be such a thing as hogwallow land that is first-class in the sense that a man may be a first class criminal. He is a first-class man in that respect. Such land has hardpan at no great depth and in consequence cannot be first-class for any kind of farming purposes.

* * *

HISTORY REPEATS

The Rural New Yorker in commenting upon the Stringfield method of pruning the roots and tops of trees before planting, says that this method has been of great service in showing that it is not necessary to retain nearly as much top and root as was formerly supposed. They are now cutting the tops of the trees down to 12 or 18 inches and are cutting the roots much shorter than formerly.

Now had the fruit growers of the middle states visited California twenty years ago, they would have seen this sort of thing in practice in every prominent fruit growing section of the great valleys. We remember visiting an old orchard of 400 acres in Sutter County, California, some twenty years ago, and all the trees had been cut at planting time to a stalk 12 to 18 inches long. The orchard had been planted some 10 years before that time, making them thirty years old now. It is still a productive orchard and a good income property. Now the growers in the middle western states have just learned from Mr. Stringfield that it is just as well and perhaps a little better to do as we have been doing for thirty years. Nobody in California seems to take any credit for evolving this method that has been in use for so long, it was simply worked out by a dozen or more growers at about the same time; the incentive that set them to thinking about it being the fact that the sun burned the trunks of the trees unless protected, and incidentally, the extra expense incurred by having to use long ladders. When growers found that the inconvenience of cultivating beneath a tree that branched within a foot of the ground was insignificant compared with the benefits derived from the increased vigor due to the natural shading of the trunk by the low-hanging branches and when the advantage of being able to pick most of the fruit from the ground for a number of years was added to the other advantage, the subject was settled in short order and the method was not discussed any more, it having become a settled question.

As to the root pruning part, it has been the custom always to trim the roots with a clean cut before planting. This with the loss of roots when digging from the nursery resulted in about half of the root system being removed. We feel impelled to reiterate these methods because there seems to be an impression that a new method has been evolved from the Stringfield method, when in reality, a practice that has been in vogue in California for over thirty years is just beginning to attract attention in the middle and eastern fruit growing sections.

There has been considerable severe criticism of Mr. Stringfield's horticultural ideas, but he has been thinking and of course that means progress. More credit is due him than there is to the California growers who were driven to their practices by necessity occasioned by our climatic conditions. Mr. Stringfield had considerable prejudice confronting him at the outset and while he was on the right track, his extreme methods not proving applicable to universal conditions, yet working well with him, he has been the cause of bringing into use, improved methods in horticulture.

THE APPLE CURCULIO.

This insect is related to the more common form known as the plum curculio, having a somewhat longer snout and being a little larger. Professor C. S. Crandall, of the Illinois Experimental Station, has done some interesting investigational work in looking for a remedy for this insect pest, says the Apple Specialist. In his work he found that the insect pupates in the ground. He examined the soil beneath the apple trees carefully and found that the insects do not enter the ground to a great depth, so that in the pupa state they are more easily destroyed. Of one hundred and seventy-nine curculia, forty-five of them were found at a depth of half an inch; fifty-five of them were at a depth of three-fourths of an inch; forty at a depth of an inch, and the remaining eighteen were found at depths ranging from one to one-fourth inches to two inches. Thus the insects can be destroyed by giving the orchard clean cultivation while the curculio are in the pupa state.

Professor Crandall's experiments developed the fact that most of the insects go into the ground from the 5th to the 25th of June and emerge as adult beetles during July. So that it is apparent that if the trees are given clean cultivation during June and the first part of July the injury from curculio will be greatly lessened.

Another remedy suggests itself here, and that is the use of poultry in orchards. It is a well known fact that plum trees which are located in the poultry yards bear fruit, and now that the plum curculio is at work in apple orchards an added reason has been given for the keeping of poultry in apple orchards.

Inasmuch as the plum curculio works on peaches as well as on plums, peach trees should not be planted in apple orchards. Illinois growers who have had peach trees among their apple trees have reported that their apples have been much worse injured by curculio than fruit in orchards more remote from peach trees. At all times avoid mixed planting of apples and peaches. There are other objections to this practice, but this is one of the most important.

PEACH BLIGHT.

There is no denying that the peach blight is doing great damage in this valley this year. Practically every locality in the county is badly affected; young trees are not nearly as bad as old ones, but the growers are alarmed as to the future of the industry here. They have in mind the experience of the pear growers who lost their trees by blight.

There was a recent article in the Cultivator explaining why climatic conditions of Southern California are not conducive to profitable peach culture, and it has been noticed that these conditions have existed here the past winter, that is, a warm February, which started growth and sap, and then a cold and damp March and sudden checking of growth just at the time of blooming when the flow of strength should be most vigorous. While the tree is in this weakened condition it is probable that it is susceptible to fungus disease for which spraying is recommended by our experts. I think spraying with Bluestone solution should be practiced by growers both in fall and spring, which with weather conditions again more favorable may restore the trees. Some growers think that spraying early this season has saved them a crop for this year while others say the spray has had no effect.

The industry is of too great importance to let it go without a hard struggle and every grower should make it a study and apply any remedy which may prove beneficial.—H. G. H., Fresno.

FARMING IN THE SCHOOLS

This movement for the introduction of agriculture into the schools seems to be a sane reaction timed to meet a great need. As a matter of fact, there is no dearth of agricultural knowledge. The work done by the United States Department of Agriculture is good in quantity and quality, but it does not reach the farmer as a class. The same may be said of the work of our agricultural colleges and training schools. There is needed a connecting link between the work done by these and the people for whom it is done, if it is to be made generally available. The farmer lacks not so much in intelligence along these lines as in interest. The development of this essential interest in things out of doors may well be entrusted to our schools under competent supervision. The basic facts of the relations of the plant to soil, light, heat and moisture are probably no more difficult to teach or to learn than is the "rule of three," the extraction of cube root, or the conjugation of a verb. Such work as this, always considering that it is limited by common sense in the presentation, will enrich any course of study, whether intended for use in city or country, for it comes within the category of things which everyone should know. They are cultural as well as agricultural.—Edward Huges in Sunset Magazine for April.

Make yourself a necessity to the world by what you contribute in the way of personal comfort, by what you are in embodying before men all that is gentle, generous, and pure.—M. Dana.

Plant Loganberries

For profit. We are prepared to purchase the fruit and, in fact, all kinds of small fruits, even if too ripe for other uses. If you have

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Est. 1889. SANTA ANA, CAL.

Of Interest to Fruit Growers

Sometimes it pays to take the first market. Sometimes it pays to wait until your fruit is dried. I will furnish free to all producers of Dried Fruits a compilation of the stocks of Dried Fruit in all the largest cities in Europe and the United States. After seeing this report you will know when to sell and at what price. My estimates were correct in 1904, when prunes sold at 1 3-8 bag basis. I estimate apricot and peach prices. Contracts made by or through me will be safe. I never have had a draft rejected or unpaid. Reference: American National Bank, and Bank of California, San Francisco.

F. W. Dieckmann
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Practical Farm Science

BY PROF. A. J. COOK

BEE FEED

Near the east end of the famous Leipsiger-Straus of Berlin, is the honey emporium of this great capital city. Here, more than anywhere else, can be seen and studied the methods of honey production as practiced in this country. Here we may see honey in all styles as sold in the city. Hives, beebooks and all sorts of apiarian apparatus as illustrating the practice of German beekeepers. I was most interested in three kinds of candy manufactured and sold here, one a chocolate mixture, in which honey is the leading ingredient. Each of these I find to be delicious, and their sale must be not only very remunerative, but must make call for a large amount of extracted honey. The owner of this establishment is none other than one of the most distinguished beekeepers of Germany, Mr. Schulz, who was the first I believe, to manufacture the "bee candy" known in America as "Good candy," so called from one of its inventors, a Mr. Good, who lived at the time of its invention in Indiana. This candy is used exclusively in shipping queens and is valuable for other purposes. It is made by mixing together extracted honey and pulverized cane sugar in such proportions as to form a pasty mass, and thus resembles strikingly candied or granulated honey, so familiar to us all. This however is to be preferred, especially for shipping queens, as its consistency can be regulated precisely to our liking. This Good, or Schulz candy, is like butter, in being pasty, and so can be easily crowded into the augur holes of the queen cage and with no addition of water or other food of any kind this can be used with such perfect success that the queen bee and her attendants —ten or twenty nurse bees—are easily and safely shipped around the world. As these may go by mail, a two-cent stamp is enough to warrant their safe delivery even in far distant Australia or New Zealand. This Good candy may also be used in case we must feed our bees and is easily and safely fed by simply crowding it between the tops of the frames. It is especially to be recommended for winter feeding in regions of cold winters. I need hardly say that candied or granulated honey may be fed in the same way.

* * *

Schulz Hives.

The apiary of Mr. Schulz is extensive. He has hundreds of colonies of bees. I have not as yet visited his bee yard but shall do so soon, and will then give our readers the valuable features as exhibited there. I have, however, examined the Schulz hive, kept for sale here in the city. It is a long hive, much like the "new idea" hive, so much talked of in the United States States a few years ago. The frames are not much different from those used in America, but the hive is without movable top. That is, it is thoroughly closed and nailed from above. Thus the frames must all be moved out at one end. This is so tedious and awkward that I am sure no American beekeeper could be induced to use such a hive for a week. Certainly not longer than it would require to change the bees into a top opening hive.. I think even in Germany where the people are very patient and slow to anger, or at least to show excitement, that these hives will not be opened very frequently. I dare say that in many cases they are practically hives with non-movable frames. I am free to say that to my mind nothing shows more graphically the non-progressive habits of the working classes of Germany than the fact that such hives are of common use. Indeed, next to the old straw skep, they are the prevailing hive of this country.

HOW TO RAISE QUEEN BEES

Queens are raised by two methods, one the swarming or natural, the other the forced or artificial method. Both have their advocates, but the preference of many is with the artificial. I select a colony that is good natured and has workers. From that colony I take the queen, and two combs with the bees on them. I put them into another hive and give them an empty comb or a frame with a sheet of foundation in it, then set it on a stand somewhere else. In place of the two combs taken, I put a division board at the outside of the brood nest after bringing the combs together. Then put the honey boxes on and close up the hive.

I go to the hive I want to raise my queen from. Into the center of this hive I place a frame that is half full of good old worker comb, close up the hive and let both alone for at least four or five days. I then examine the comb for eggs and larvae and expect to find some new comb built at the lower edge of the comb that will contain eggs and larvae. I set this comb and the bees on it (brushing off the queen into the hive if she is there) into an empty hive and cover with a cloth. I now go to the hive that I took the queen from, and examine that for the queen cells already built. If I find any capped, I tear them out. Those that are uncapped I pick the grubs from and with a goose quill toothpick I take a minute grub from the comb I took from my selected queen and replace all the grubs I picked out of the queen cells. I then sweep the bees off the selected comb in front of the hive they belong to, and cut off the lower edge of the comb clear across where the eggs are just hatching into grubs. I then take out one of the division boards, separate the brood nest in the center, put it in my selected comb, and close up the hive as it was before.

Queens raised in this way between July 1 and 20, are ahead of natural swarm queens. While the bees are building queen cells and capping them, which takes from five to eight days, I trap the drones and kill them from all the hives whose bees possess undesirable qualities of any kind. Keep them trapped off or shut in until after the young queens are all mated.

H. L. J.

MINNESOTA AT THE HEAD.

Minnesota dairymen and butter makers are justly proud of the many triumphs won at the national creamery shows during recent years. This year Minnesota butter stood head and shoulders about the butter of any other state. The National Creamery and Buttermakers' association has during the last seven years offered seven banners, one each year, for the highest average butter from the various states. Minnesota has secured five of those banners. Illinois one and New York one. This year Minnesota took the gold medal for the best tub of butter exhibited.

PRAIRIE DOGS KILLED BY SOAP

John F. Braun, a farmer near Miltonvale, Kan., had about 100 prairie dogs on his farm and started in to wipe them out. He used traps. After he had caught about thirty the rest got wise and would walk around his traps. Among the thirty was one that the trap didn't injure, and he put in a cage for a pet. By mistake his children fed the prairie dog in the cage a small piece about the size of a hazel Within five minutes the prairie dog was dead. Mr. Braun decided to experiment. He cut a bar of soap into small pieces about the size of a hazel nut and threw a few pieces into each hole in "dog town." The next dav there wasn't a solitary prairie dog left to tell the story. All were dead. Ten cents worth of soap will clear a big farm of prairie dogs.—Kansas City Journal.

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California Horticulturally

NO GIPSY MOTH IN CALIFORNIA.

A request made some time since by the Commission of Horticulture for caterpillars of different species to be sent for identification to San Francisco has given rise to a statement that the Gipsy Moth was with us. Such is not the case, but it is desired that people finding caterpillars with which they are not acquainted to send them to the Commission for identification. There is always danger, even though remote, of introducing new pests, and it is desired to know of the existence of every species in order that if a new one should appear it may be checked at the outset.

THE FLAT-HEADED BORER.

The destructive tree borer so well known to horticulturists as the Flat-headed apple tree borer and to entomologists as Chrysobothris femorata has become sufficiently established in some parts of Arizona to demand attention. This region has remained remarkably free from injurious insects; but during the past two years at least the above named borer has done much to hasten the death of full-grown orchard trees that have been injured by heat, and has destroyed many newly-set ones. Last summer several young apple and plum trees were killed by it at the Station farm before its presence in them was suspected, and others report the loss of young trees as a result of its depredations. Examination of whose merits entitles them to that adlarge peach, plum and quince trees that appeared to be dying from the effect of the sun revealed the presence of the borer in most cases.

This insect is found in all parts of the country, and annually destroys vast numbers of trees. It attacks apple, pear. quince, plum, peach, cherry, ash, elm, maple, box-elder, sycamore and willow trees.

The injury is done by the flat-headed borer during its grub or larval stage. The adult insect is a beetle about half an inch long, flattish-oblong in form, shiny greenish-black above and copper colored below. The female deposits her eggs in the crevices of the bark of the trunk and main branches, usually on the south or southwest side, where the effect of the sun upon the trees is greatest. At the station the most of the eggs are probably laid during April and May. Although eggs are sometimes deposited by this insect upon healthy, well-established trees, it evidently prefers to select sickly or newly transplanted ones, especially those whose bark has been injured by exposure to the sun.

The eggs hatch within a few days after being deposited. The young larva soon eats through the bark and proceeds to bore at some depth beneath the surface, leaving behind it a flattened channel. Somtimes a single borer will girdle a tree and cause its death. The larva reaches its full growth by the end of the summer, being then a pale-yellowish grub about half an inch long, with a broad flat head. During the winter it remains quiescent. The next spring it bores out nearly through the bark, then moves back a little and undergoes its change into the adult beetle form the transformation being completed in about three weeks. The beetle then cuts an opening through the bark and escapes to continue its work of destruction begun by its ancestors. During the warm part of the day it may be seen flying about in the hot sunlight

There are three ways of combatting the borer: (1) by destroying the grubs while they are at work in the tree, (2) by the application of some substance that will prevent the eggs being deposited or will destroy the eggs and newly-hatched larvae, and (3) by wrapping the trees with something that will prevent the females gaining access to the bark. But, by the best methods known, borers are difficult insects to combat. The larvae make their way into the wood soon after the eggs are deposited and keep so completely out of sight as they work, that they may do injury before their presence is suspected, and are difficult to kill when detected. It is a case where an ounce of prevention is decidedly more effective and more economical than a pound of cure.

When the borers have entered the tree, they may be destroyed by cutting them out or by killing them in their burrows with a pointed wire if they are not too deep or too far from the point of entrance. In some cases where they cannot be reached with a wire or cut out without seriously injuring the tree, they may be killed by pouring kerosene or hot water into their burrows. The location of a borer is usually indicated by a slight discoloration and flattening of the bark and by the exudation of sap.

A great variety of washes have been used for preventing the female beetles from laying their eggs upon the trees. The following is probably as effective as any that can be safely used without danger of injury to the bark. Dissolve one-half gallon of soft soap or five pounds of whale oil soap in one-half gallon of hot water, and add a half pint of carbolic acid. When mixed add five gallons of warm water and enough lime to make a whitewash of about the consistency of paint. Finally stir in one-fourth pound of Paris green Apply the wash in April before the eggs have been deposited on the trees and again in a few weeks. All cracks and crevices must be filled and the bark thoroughly and completely covered, a stiff brush being best for the work. It must be understood that the work has no effect upon the borers after they have once entered the tree, but is intended to prevent the depositing of the eggs or to kill newly-hatcher larvae before they have entered the bark.

But the use of something that will not only protect the trees from the attacks of the borers, but from the heat of the sun, is more useful and economical than a simple wash. As has been stated, the parts of trees injured by heat are more liable to the depredation of borers than the healthy uninjured portions. Therefore, anything that will prevent "sun-scald" and will at the same time keep off insects will be a double benefit to the tree. A very effective, and at the same time inexpensive cover for the trunks and main branches is one of newspapers and wrapping paper. If several thicknesses of the paper are wrapped about the trees, beginning a little below the surface of the soil, and then tied with a weak string that will not cut the tree as it grows, very effective protection is secured. It is important that there be no openings that would admit beetles. Drawing some soil about the base of the wrapper will close it at the bottom, and seeing that the wrapper fits closely at the top will prevent entrance at that point. Instead of the paper, wrappers of thin, flexible sheets of wood such as are used in basket making may be used. The bottom may be closed with soil and the top with cotton wool. Either wrapper will protect trees from the injurious effects of the sun.

It is important that all young trees be protected in the future, especially during the first season. Failure to take this precaution may result in the loss of the most of the trees of a young orchard. Even if there were no danger from borers, it would be advisable to put on the wrappers of paper or wood to protect young trees from the sun. If the trunks are artificially protected until the branches have extended far enough to shade them much more vigorous orchard trees will be secured. In this connection, it may be well to call attention to the importance of heading trees low that the trunks may be better shaded by the tops.

FIELD PEA

The field pea has few varieties. It has in general colored blossoms and the seeds are more or less spotted with brown. The field pea is chiefly used for fodder; but one variety, the Canadian field pea, is considerably used as a table vegetable, and in California is much used for green manuring. When two-thirds grown it is said to be delicate and well flavored, and it has the advantage of a longer season than the garden pea. As a dry pea it is inferior, as it does not cook soft.

NEW FOUR-ROW SPRAYER
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Having sold my ranch, I offer this fine Iron Age Four-Row Sprayer at a nominal price.

I ordered this Sprayer last year, but it did not arrive until the close of the season and is therefore practically new. It is operated entirely by horse power, being built somewhat on the order of a one-horse hay rake. It sprays four rows of vegetables at one passage and can also be used for spraying trees.

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With the Citrus Growers

BY J. W. MILLS

ORANGE POSSIBILITIES

We were telling a Redlands man the other day of a fine lot of oranges that were grown in a Riverside orchard, running about forty per cent fancy. He said: 'Oh, that's nothing, we have some orchards that beat that." We went around to the Exchange packing house and the bookkeeper showed us records where one ten-acre tract turned in fifty-two tons of oranges that went 68% fancy, 25% choice, 5% standard and 1% culls. We that that was pretty fine but he said we will go and look at an orchard that beats this. This orchard was located far above Mentone against the side of the mountain on a rather heavy clay loam, on a small backbone that had rather steep slopes on each side, protected by high mountains on the north, east and south sides. It is on an ideal soil protected from frosts and wind, very warm and consequently matures the fruit very early. In the December pool, the fruit ran 95% fancy and averaged about 65% for the balance of the crop. This man has used very little commercial fertilizer and he uses all the stable manure he can get, but it takes him three years to get over his thirty acres.

It would be impossible to make a record like this in any exposed location and doubt if it is possible to bring about such results artificially. In the first place we do not know what produces them and if we knew we could not find natural situations of any extent in which to do it. When it comes to doing horticultural things in a "gilt edge" style we must leave it to nature to a great extent, still these cases serve to guide us along certain lines for there are always little contingencies that arise in such cases that give us certain ideas from which we may derive profit. In this particular case, we were thoroughly convinced that it does not take an abundance of fertilizer on ordinarily rich ground to give the best results. The trees were 15 years old, average about six boxes per tree and about 80% of the fruit packed fancy. The mechanical condition of the soil has been kept good by growing green crops. Had this orchard been exposed to the elements that invade 99% of our orange groves, it would have been impossible to have achieved such results.

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CITRUS TREE PLANTING.

On account of the cool weather in April it is possible that May planting will be equally as successful, but as the weather is warmer then the trees require more careful handling. Trees put out in the early part of April show no signs of wilting and will commence to grow right along whenever the roots begin to take up nourishment. Summer planting can always be successfully done, but as a rule early plantings stand the cold weather better during the following winter. In April trees could be moved with naked roots, and so can they in May, but unless the planter knows his business thoroughly, he had better not run any risk, but have them balled. They will be likely to be more successful if partly dug and the tap root cut a few days before moving.

* * *

Watering Trees—In early April watering newly planted trees can be safely deferred for a few days, but in the month of May the best success will be found to follow watering soon after moving, and also having as short a space of time elapse between digging and planting as possible.

* * *

Trimming—Trimming of citrus trees should always be done before commencing to dig them, as the tops are apt to suffer some for cutting off the circulation by shortening the roots. Nevertheless a second light trimming is often beneficial after planting, to promote the uniform appearance of the trees and also to restore the balance between roots and top. An orange tree is not like a deciduous tree, for its leaves are always making drafts on the roots for moisture to supply loss from evaporation.

* * *

Replanting—If a newly moved tree does not freshen up by next morning after planting and irrigation, but keeps wilting and going back, it is not a sure sign that the tree is going to die, but if the orchardist wants all the trees in the orchard to be uniform it will be better to root all such wilted trees up and replant with a new tree. In the cooler weather of April trees need not wilt at all, but keep right on growing and perfecting the young growth, but in May the young growth is pretty sure to be sacrificed. By replanting thus early there will be none of those gaps in the orchard that often mar its symmetry for years.

* * *

Varieties and Budding of Seedlings.—In oranges the navel is easily ahead of all other varieties, and the seedling is now no more thought of than would be a seedling of an apple, apricot or other deciduous fruit tree. Not only this, but many are budding twelve and fifteen year old seedlings to the navel with good success. The custom used to be to cut back heavily in the spring, so as to make a growth of new wood to bud on in the fall, but this practice is being discarded for direct spring budding. With large trees many buds must be put in, so as to furnish plenty of young shoots when the old top is cut off. Many claim that there is but little loss in thus changing old trees to other varieties, and that, if successful, the increased price for the finer varieties more than pays for the first five years.

* * *

Grape Fruit—Those who have mild locations can grow the grape fruit. This tree is about like the lemon in that respect. Since it has been found that the bitter principle in this fruit is health-giving, there has been quite a demand for it in Eastern cities as a spring medicine.

Our subscribers noticed on the last page of last week's paper in which we referred to the Los Angeles County Farm bringing into the county $10,500 as a result of the selling of Valencias, with three cars yet to be shipped, for this season's output. This is an increase over last year of almost one hundred per cent. It is only just to state that this result has been largely due to the high state of cultivation and especially to the good work of Mr. Collins, of the A. C. W. Fertilizer House of Los Angeles, who has had charge of the fertilizing of these trees for several years. The A. C. W. brand of fertilizer has been used on these trees and doubtless no small part of the $10,000 income this year is due to the worth of that brand of fertilizer.

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E. G. Wood, Owner, at Nursery or Room 732 Huntington Building, Los Angeles, Cal.

The Ornamental Garden

BY ERNEST BRAUNTON, LOS ANGELES, CAL.

DAHLIAS.

Except for private collections and for exhibition purposes, it is a mistake to bother about numberless varieties, find out the really good varieties of each color in each class, then select a reasonable number of sorts to plant, and plant a sufficient number of each variety and color to produce enough flowers during the time dahlias will last. It often happens, when a great number of varieties even of cactus dahlias are grown, that there is a lack of flowers of one variety of the color that is wanted. It is also the best plan to plant each variety by itself, to save when cutting the flowers. There are very few show or fancy dahlias of much benefit for florists' use, and for that reason, and because of the many good decorative varieties available, there are but few of the former grown for cutting. Dahlias promise to be fully as popular the coming season as ever; the cactus sorts more so than any other type, with the gorgeous Century singles a close second both for planting for decoration of grounds and for planting to cut from.

BERMUDA LILY BULB GROWING.

The outlook for the commercial production of lily bulbs was found to be even beyond expectation, splendid bulbs being produced in California from seed raised by George W. Oliver in the Department greenhouses. Mr. Oliver says in regard to this work:

"During the summer of 1094 a considerable quantity of home-grown lily seed was distributed to growers on the Pacific Coast. This seed germinated well in the open and the seedlings stood the winter temperature successfully. Although the seedlings were not planted in the fields the progress made in the seed beds showed that this might have been done to advantage. Bulbs of the Bermuda lily which had been raised from seed in the greenhouses of the Department in 1904 were also distributed, and the growth made from these show that some parts of California are even more favorable to the growth of Easter lily bulbs than Bermuda. Some of the plants within two years from seed had no less than thirty-six blooms to a stalk, with no trace of disease on the foliage. The scales from these bulbs will be planted this season to ascertain how far this method of propagation will succeed under the conditions existing on the Pacific Coast.

DECORATION DAY PLANTS

There was a noticeable increase in Decoration Day business all over the country last year, with a still more noticeable increase in the number of plants used for that occasion. Formerly it sufficed to place some flowers on the graves, but now organizations and individuals strive to make a more permanent decoration as a token of respect to the memory of the departed on that day. The inauguration of this commendable custom is of material interest to growers and dealers as is any movement having a tendency to increase the demand for their products; and it seems for that reason, if for no other of a more sentimental nature, they should do everything possible to encourage its growth until it becomes a firmly established national annual obligation on the part of the living to the memory of the departed. An attempt should be made to make a specialty or specialties of subjects appropriate for the purpose by advertising and otherwise, just as at present there are special things understood to be appropriate for Christmas and Easter festivals.

PLANT NOTES.

The person who plants shrubs should be sure of what they are planting. He should select kinds which are hardy and beautiful, and able to get along without much attention after they are once established. Popularity is not a reliable guide in the selection of shrubs, unless it is based on merit. If this truth is kept in mind it may prevent the amateur gardener from expending a goodly sum of money on a shrub that is advertised into popularity, while the money so expended would have bought several shrubs whose merits entitles them to that lasting popularity which does not depend on advertising puffery. We do not want a shrub for its high-sounding name, its foreign pedigree, or its aristocratic associations, but for its beauty. Never lose sight of that fact.

It is absolutely impossible to create a healthy race without an abundance of fresh air. Seeing that it is impossible on the score of expense to convert our cities into places where a healthy community can be reared, the railroads must be utilized as never before to carry the bread winner rapidly between his place of business in the city to his suburban or country home.

Along the track of each railroad that radiates from the city a series of residential parks, or garden cities, should be built extending for 40 or 50 miles away, the more distant to be reached by express trains. These garden cities should be beautifully designed beforehand by architects who are also artists in landscape gardening. The individual cottages will occupy not less than 100 hundred square feet of land, or four ordinary city lots, affording a flower garden around each home. The avenues will be always curving and the village green or city park will be a frequent place that gladdens the eyes of all who frequent it.—Outdoors.

VIOLETS.

There is probably no flower in all the floral kingdom that is so dearly loved and appreciated as the violet. No one who has a garden but what must have a violet bed and luxuriate in its flowers. Anyone can grow the sweet things who is willing to give them proper care and attention.

The place selected for violets should be level, the ground covered first with well rotted manure and thoroughly spaded in and carefully worked and raked over. The plants should be put ten to twelve inches apart and sufficient space left between the rows for the plants to grow and leave a good path. Strong runners should be planted as the hard old stools are worthless for replanting.

The plants should be watered three or four times a month, the frequency depending on the state of the weather and evaporation. They should be mulched with rotted manure to keep the soil from baking on the surface, and should always be hoed and carefully cultivated a few days after watering.

The following are leading varieties: The California, a fine large single violet with long stems; very fragrant. It created a perfect furore when it was first introduced, and is still valued, but has a formidable rival in the lovely Princess of Wales, a special variety which has bordered petals and a more soft shade of blue; fast becoming the "trade" violet of the State. The stems of the flowers stand high above the foliage, which adds to their beautiful effect. A new favorite has appeared named La France, which is said to have much larger flowers and even a prettier blue color than the Princess, while the fragrance is delightful. The stems are also much longer.

The dainty little perpetual single violet,, though it cannot compare with the new varieties in size, will keep its place, for it gives its sweet flowers all the year.

Queen Victoria is a strong growing single violet with good sized flowers, different in form from the Princess or California. Among double sets, the Farquhar has enthusiastic admirers who claim it will supercede all others. It is very large and double, on very long stems, with magnificent flowers of the darkest deepest blue imaginable. Contrasting with it is the Lady Hume Campbell, a charming light blue variety.

Mad. Millet, called the pink violet, is a dainty one, with quite small foliage and flowers a beautiful pinkish mauve.

Marie Louise is a dear old friend of violet lovers, and will always be appreciated. Its exquisite double violet blue flowers are beautiful and claim the same admiration they have of yore. Swanley White is yet the only double white one of value. It has lovely double white flowers exactly like Marie Louise except in color.

Le Parme is a charming sort with dark green foliage, and very dark blue double flowers, it flowers when other varieties have bloomed and gone.

Viola pedunculata is a native of the Golden State. Golden in color with a dark brown eye. It is a bright, pretty flower with scent of peaches. It would be interesting to cross it on one of the single varieties. Some valuable sorts might be obtained.

A collection of violets would be a source of great pleasure and give many beautiful flowers for several months.

We sell country lands. CHATFIELD & VINZENT, 228 Montgomery St., San Francisco, Cal.

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Also a fine variety of Eastern trees, such as Lindens, Maples, Horse Chestnuts, White Elms, etc., all well established in cans. Dracenas, Palms, Roses, Ferns, etc.
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Premo is adapted to the cold nights of the Pacific Coast—grows rapidly—produces abundantly. Will raise a fine crop of succulent, tender ears, under conditions that would stunt any other corn.
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It pays Market gardeners to raise Premo as it is on the market three weeks before other varieties.
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Our Specialty Burbank Crimson Winter Rhubarb
APRIL, MAY and JUNE is the best time to plant for a heavy crop next winter. $1.50 per dozen, $7 50 per 100, $50.00 per 1000.
We still have a few thousand Fancy Navel and Valencia Orange Trees.
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In the Vegetable Garden

BY ERNEST BRAUNTON

RUST-RESISTING CANTELOUPE

The canteloupe rust or blight has for a number of years seriously injured the canteloupe industry in Colorado and in the vicinity of Rockyford. In dry seasons the disease may not excite much notice, while in seasons subject to rains and dews its development is very disastrous to the crop. The disease is caused by a parasitic fungus (Macrosporium cucumerinum). Attempts by the station to control the disease by the use of Bordeaux mixture have failed. The station has issued a bulletin on the subject.

In 1903 it was observed that some of the plants in a number of fields which had been grown from a single strain of seed were much more resistant to the rust than others. Seed from these immune plants was obtained and planted in 1904 and likewise in 1905. A large proportion of the seed from these rust-resistant plants produced a large growth of vines and large solid melons with firm flesh and small seed cavities completely filled with seed, while unselected seed produced plants greatly injured by the rust, with small melons which ripened prematurely, thin watery flesh, large open seed cavaties, and of practically no market value.

Upon investigation it was found that the rust-resistant plants traced back to an accidental selection made some nine years before by J. P. Pollock. In selecting muskmelons for seed attention should be paid to quality as well as rust-resistant. A schedule is given suggesting points which should be observed in melon seed selection. Muskmelons, which, from their outside marking appear satisfactory, should be cut open and examined in regard to size of seed cavity, character of flesh, etc. Observation at the station has shown that a close netted melon does not lose weight by evaporation as rapidly as one not so closely netted.

ANGLE-WORMS IN SOIL.

In a European experiment to determine the effect of angle or earth worms on the soil, alternate layers of different kinds of soil were placed in zinc boxes with one glass side, earthworms were added, the soil kept in a proper state of moisture, and the changes which the soil underwent determined by analyses at the beginning and end of the experiments, which lasted one year. A check series of boxes was treated in the same manner except that earthworms were not added.

The results show that in the soil to which the earthworms were added the phosphoric acid soluble in 10 per cent hydrochloric acid increased in all cases. The lime content, which at the beginning was greatest in the surface soil, was found at the end of the experiments to gradually increase from the surface toward the subsoil. The nitrogen was more uniformally distributed throughout the soil at the end of the experiment than at the beginning.

OLD GARDEN SOILS.

Chemical analysis of old truck garden soil showed it to be more than twice as rich in all the elements of plant food as the best manure, and yet when such plants as corn salad or spinich were planted on this soil only inferior crops were secured.

Analyses of the matter in the soil soluble in boiling water showed that it contained much less available plant food than the same soil earlier in the spring before cropping had begun. This, then, is considered to be the reason for the defective crops at this time—a lack of immediately available plant food due to exhaustion by two or three previous crops grown earlier in the summer. When the "dead" soil was treated with a dilute solution of carbonate of potash it was found that practically as much nitrogen and phosphoric acid was made available as was required for the production of good crops earlier in the season.

It is held, therefore, that if these "dead" soils are treated with some other agent which will liberate the potash of the soil in the form of carbonate of potash a full crop is assured.

THE PEANUT.

The peanut is so different in appearance from the bean and pea and is put to so many uses that it is seldom thought of as a legume, but a study of the growing plant immediately shows the resemblance. Here we see the same straggling, more or less trailing annual, with characteristic leaves, and the butterfly-shaped blossom, whose ovary develops into a seed pod. The manner of growth from this point is very peculiar; as the flower withers the stalk or spike of the ovary rapidly lengthens and pushes into the group, so that the pod is matured beneath the surface, but if the spike is prevented from doing this it soon withers. Other names for this plant are the earthnut, groundnut, ground pea, goober, and pindar. Where the peanut originally grew is uncertain. It is now widely distributed in tropical and subtropical countries, Africa and our own Southern States producing most of the crop, though the acreage in California is yearly increasing.

Some Experiments in the Propagation of Rhubarb Plants

Patient Work by J. B. Wagner of Pasadena Which is Bringing Out a Fine Product

In an article in the issue of April 20th, in which we referred to the money making possibilities of Crimson Winter rhubarb, we referred to Mr. J. B. Wagner and his patient investigations at his experimental farm at Pasadena. At this place he has over twenty varieties of rhubarb which he has secured from Eastern and Australian gardeners, many of them of indifferent value for marketing purposes, but used by him in his work of hybridizing, to secure, if possible, something that is even better than the Crimson Winter rhubarb, which has been so popular for the last few years.

As mentioned in the former article, Mr. Wagner has already secured some plants from this crossing which have given exceedingly large stalks, making a very fine flavor and well colored sauce. However, tireless, investigations go on, hoping to find something still better.

On visiting Mr. Wagner's grounds we were surprised to see so many small tents scattered about the field—on inquiry we found each tent covered an individual plant of rhubarb having special merit—this is done to keep from mixing the pollen—or to protect such as have been hand pollenized by him. Fortunately for Mr. Wagner he is so situated financially that he can devote as much time and money to his chosen vocation as he chooses and work under the most favorable conditions. He surely has our best wishes for success in his chosen enterprise.

These plants which have been successfully tested at Mr. Wagner's grounds are not offered for sale as yet, nor will they be, until proved thoroughly satisfactory. So far as selling the plants is concerned, Mr. Wagner has confined himself entirely to the original Burbank Crimson Winter. He says that this is so successful as a money maker that even the most cold-blooded must enthuse over its merits, and in this statement he is backed by the fact that all of the rhubarb medals won at the Portland Exposition were to the credit of Crimson Winter. Mr. Wagner, himself, having to his credit a portion of the awards.

Among the enthusiastic growers of Southern California, we may mention Mr. W. A. Lee, of Covina, also Mr. W. H. Purdy of Whittier. Mr. Purdy has dubbed this remarkable plant the "California's mortgage lifter," and it is made so by the fact that very ordinary care, and a very small number of irrigations, will accomplish wonders in a financial way. Mr. Purdy has picked from 2000 plants over 400 pounds at the first picking. He has one plant which on November 27th showed fifty stalks from twelve to twenty inches long, from a plant which had been planted in the July preceding.

The market price, which we believe we have touched upon before, sometimes runs as high as 12 cents per pound, wholesale. At present it is commanding not much more than one-third of that price, but even at that 4 cents per pound, Mr. Wagner picked last week from one row 350 feet long, $21.50 worth of fine large stalks, and this is the off season for Crimson Winter besides.

Regarding the picking we asked Mr. Wagner as to whether there was a certain cut or any particular care required, and he said not more than any ordinary laborer would exercise if careful. The only point being to give a slight twist downward and to one side, pulling gently so as not to pull out the crown stalk which may be just started.

We are glad to know of Mr. Wagner's success in producing and growing this money maker and wish for him success in his propagation experiments and that if possible he may win out with a stronger grower and a bigger money maker than is the Crimson Winter. If he does he certainly will be worthy of the highest commendation by all growers who will be benefited by his experiments.

In reply to a query regarding the origin and introduction of Crimson Winter rhubarb, Mr. Burbank says it originated somewhere in the Southern Hemisphere. He does not know just where or how, probably Australia. It is very little known there today as frequently orders come from there for it. This rhubarb was first introduced here by Burbank about 1899, at the time he did not think much of it as the stalks were short and small, so he began improving it by ordering great numbers of seedling and selecting the best. After a couple of years selection he had it much improved and then offered it for sale, hence as it is now known in California, it may be said to practically have been originated by Burbank. Like all rhubarbs, it has a tendency to vary in most characteristics, but strange to say it holds rigidly to the habit of winter growth and exceeding hardiness and vigor when once established It may also be said if used for propagating purposes and taken from plants far removed from the the original Burbank strain they are apt to prove very unsatisfactory, hence parties intending to plant will do well to secure plants, if possible, from parties such as Mr. Wagner, who offers plants only from stock originally secured from Burbank.

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Business Training for Farmers.—The time has gone by when a farmer can succeed without business education. It is a recognized fact that one of the greatest needs of the present day is a knowledge of business methods.

Farming is a trade in the sense that it must be learned like any other trade, and has its mechanical side. It is a profession, and demands the high class education, scientific knowledge and technical skill required by all other professions.

But farming is also a business, and the farmer should be a business man. He should know how to write business letters, how to keep books, how to handle commercial paper, and how to render statements of his assets and liabilities at least once each year. More than this, he should be trained to buy and sell; he should keep thoroughly informed regarding the markets and should study business methods. Such information means money in the farmer's hands; it means greater respect for the people with whom he does business; it means increased pleasure and profit in all the relations of life.

To acquire this training and special knowledge takes time, and will mean some expediture of money and effort; but it pays. The hours a farmer spends studying his business, keeping his books, checking his crops and in caluculatiig the profit or loss resulting from each field, tree, fowl and animal on his farm—such hours devoted to thinking, planning and learning—are not wasted. They will prove the most profitable hours of the whole day.

The farmers of the present must be business and professional men first, and tradesmen and laborers afterward. The manual labor of the farm occupies a large place in the estimation of some people; but up-to-date money-makers give it a secondary position. The work of the brain is supremely more important than the work of the hands.

The modern farmer reads the papers, not only one, but two or three; he takes a magazine, he buys books, he studies bulletins and agricultural reports; he takes time to think, he attends conventions, keeps himself broad and polished by traveling a little each year; in short, he is a man with a purpose in life, and is anxious to make the most of himself and of his opportunities.

* * *

Long Labor Hours.—The problem of supplying the ranches of California with hired help is one which is worrying the owners just now as the busy haying season is about on. Discussing the scarcity of hired help with a farmer recently, he expressed the opinion that one reason why help is so hard to get and keep are the long hours required. From 6 o'clock in the morning to 6 o'clock in the evening, with only an hour at noon, is a long stretch for heavy farm work.

A good many farmers are being converted to the idea that 10 hours a day are long enough for good and successful work. They find that it is better for their horses and hired man to work rather more vigorously during a short period than to take it slower through a larger number of hours. Much time is wasted on most farms in so-called necessary rest of teams. If the hours of labor were shortened a greater amount of work could be done and the man and animals be in better shape at the end of the day.

When a man, whether he be a hired laborer or a member of the family, knows that at a certain hour his work will end he has a greater incentive to put his best energies into his work. Some of the most successful farmers have held to the 10-hour rule with most satisfactory results.

Ten hours a day is about all a farm team can stand, and if our horse tire in that time the man is certain to tire. Our fathers and forefathers toiled from sunrise to long after sunset, but they were necessitated so to do, for the reason that they were not supplied with improved machinery nor appliances to expedite work as are the men on the farm today. The Cultivator believes it would be a financial benefit to every farmer is he would adopt the 10 hours a day rule. He could save teams and he would save himself, his help and his wife tedious hours at the end of the day.

* * *

International Agricultural Clearing House.—David Lubin of Sacramento has just returned from a tour of observation and exploitation throughout Europe, with a view of establishing an international agricultural clearing-house, and he states that such an idea is well conceived and practical as proved by the fact that most of the civilized countries of the world have signified their approval and their adhesion. Mr. Lubin is to be congratulated upon hs success, says the Union, and the Cultivator might add, so is California to be congratulated, for if Mr. Lubin succeeds he is the promotor of the greatest agricultural proposition of the age.

The project, in its main features, says the Union, seems to aid at the creation of an international information bureau which will concern itself with produce and prices. By forecasting the extent and the success of the various crops, and by the general diffusion of such knowledge it will have a steadyng effect upon prices, and consequently a beneficial effect upon wages. It will eliminate upon the one hand the professional manipulator whose profits depend upon the greatest ignorance of the greatest number, and upon the other hand it will tend to remove the uncertainty as to the crops that compels the manufacturer to provide a margin for his own protection, and a margin that has usually to be furnished from the wages of the laborer. Such particulars can always be collected by the various nations within their own territories and for their own use, but now for the first time we have any attempt at an international arrangement by which the knowledge of one may be placed at the service of all through a central institute of agriculture whose reports will be unbiased and as accurate as human skill can make them.

* * *

Reciprocity Needed—Adoplh Weiler, a land-owner and stock feeder of Dunbar, Neb., returning from a visit to Germany, tells the Omaha Journal-Stockman that German farmers have the most compact organization of any class he has ever known. For years they have controlled legislation to such an extent that they have absolutely prevented the importation into Germany of any meat or agricultural products, and by so doing control the domestic markets. He said this practically puts a prohibitive price on meats for the poorer people, and steps are being taken now by the German government to enter into an agreement with this country whereby American meats can be shipped into that country. Of course this move is violently opposed by the agrarians, but it is supported by the consumers. Mr. Weiler thinks that to further this reciprocity idea, meat producers in this country should lend every aid at their command to assist the United States government in closing a treaty that would enable dealers to secure a foothold in Germany on a more liberal basis than any treaty heretofore presented for adoption.

* * *

Rushing San Francisco.—The nightmare of gloom has lifted from the burned city of the North and the agencies which are to create a new and grander San Francisco are pulsating with wondrous activity. So many temporary structures are being erected in the fire district that before another month shall have passed, business will resume a condition almost normal. Some of these buildings spring up in a night. They harbor all manner of tradesmen and their wares, while here and there a restaurant is conducting business on a large scale.

The work of laying tracks into the burned district for the removal of debris is proceeding so rapidly that before the end of the present week cars will be carrying out the age. A score of sites were this week and plans are be fected for new and greater b on the ashes of the old on shall not know our sister cit years from now, for like a nev eration it will have modern ty unsurpassed excellence.

* * *

The Sweet Wine Bill—The pa of the Sweet Wine Bill by Con will prove of much value to the yard growing districts of the For several years the wine have been contending for a red of the duty on brandy used to f sweet wine. This duty was 25 a gallon, but under the bill passed it is reduced to 3 cents, will affect a saving of millions ally, because it will permit at an enormous output of the vint

* * *

A Suggestion for Farmer Bo The opportunities for young m training and experience in agric grow better each year. Scarc week passes that calls are not for young men who have grow on the farm and have had some ing in the College of Agriculture, take positions of trust and profit. T whole system of agriculture in t country is being revolutionized, a the men who understand the f mental principles upon which the Agriculture is based are in co demand. A young man should well before deciding to throw aw the valuable experience he has a ulated during his life on the far enter some profession where th perience will not be of special to him. As valuable, however, a experience is, no man should att to rely upon it alone in his far operations. He should add to experience at the very least a Course in Agriculture.

* * *

University News Notes—In a dater April 24, from Berkeley, announced that the summer ses of the University of California be held from June 25 to Augu While the University suffered heavily by the loss of income pro in the San Francisco fire, the Un sity buildings and their content Berkeley suffered very little dam The University work will continu usual. Commencement exercises be held. The date of the exer and the form they will take wi announced later.

Professor Lawson, of the Dep ment of Geology, is at the head committee to investigate the ca of the earthquake. Professor C head of the Department of Mecha and Electrical Engineering, is w ing with the Citizens' Committe San Francisco, planning the re struction of the new city.

Aside from the temporary ab onment of the regular University tine, on account of members of faculty and student body being gaged in relief work, there will little permanent effect on the Uni sity other than a serious fina handicap, owing to heavy loss of come property in San Francisco.

* * *

Farmers' Clubs—The Cultivator w publish the programmes from mo to month for the Farmers' Cl throughout the State if the secreta of these clubs will forward them. T should be sent in a month in adva State simply the topics to be cussed and make the announceme brief as to time and place of hold meetings.

NEWS OF COUNTRY LIFE IN THE GOLDEN WEST

HORTICULTURE.

John Franco of Napa is grafting 70,000 grape vines in Solano county.

The largest English walnut orchard in the world, comprising a thousand acres, belongs to California.

The Covina Orange Growers' Association has completed its shipment of navel oranges for the season.

Nearly one-third of the plum and prune trees in the United States, and more than one-third of the grape vines are grown in California.

The Santa Barbara County Walnut Growers' Association has elected its officers for the ensuing year and is planning for the marketing of the coming crop.

The Hanford Sentinel says the fruit crop, which will soon be ready to be taken care of, is going to exhaust the labor market; more fruit being ready to gather than there will be pickers for.

The Citrograph reports that the Italian Vinyard Co., of Cucamonga, has let a contract for another big winery. The prospect for a large grape crop is very flattering at this time.

The Visalia Courier reports that the secretary of the Visalia Board of Trade has received a cluster of dewberries ripe and plump as if they had been fully grown about the middle of June.

The cherry crop, which did not promise abundant returns in the early part of the season, now gives indications of being very heavy. The Sacramento Union says the yield will be unusually heavy unless unusual conditions of weather abound.

The Santa Clara Valley and the Hanford districts show the apricot crop to be much blackened by fungus, but the yield in these sections will be very good. Plums are very slight throughout this section; pears are also very much injured and there will be a very light crop.

The Alta Advocate has the following paragraph about fruit conditions in Sonoma County: The setting of fruit on the peach trees this season is something wonderful. Samples have been brought to this office that showed fourteen peaches on two inches of stem. The work of thinning will be no small job this season.

The Redlands Review is authority for the statement that the apricot and cherry crops in the San Bernardino mountain orchards present a very much better appearance than was supposed. The frost of last week does not appear to have been severe enough to do much damage; so with the tender vegetables. But little damage has been done to any growing crops in the mountainous district.

A correspondent from Napa County writes: Many of the prune growers of this section are complaining of the damage being done to their orchards from the caterpillar. All kinds of means are being resorted to to save the crop, and it is feared that considerable damage has already been done. In some orchards from seven to a dozen men are being employed in exterminating the pests. In others printers ink and tar is being used.

The following is quoted from the Hanford Sentinel: The Sentinel is glad to be able to state that there are many orchardists showing up who state that the peach crop is going to be better than was supposed a few weeks ago. The blighted trees have quite a good showing in the tops, while the orchards not affected by the blight are well laden. One orchardist stated that he has noticed that new growth of leaves is appearing on trees where the blight took off the first crop.

AGRICULTURE.

The hay crops in San Bernardino County is reported to be the heaviest in years.

Congress has passed the Agricultural Appropriation Bill which makes allowance for $7,481,440.

The largest beet sugar farms are in California. The product for 1904 was about 110,000,000 pounds.

Glen Bros. of Ventura County, have leased a thousand acres of land which they will plant to lima beans.

The value of farm products in California per capita is greater than that of any other state in the Union.

The asparagus yield in California this year promises to be very bountiful and this fact is disturbing the packers for they see a great waste unless cans can be secured at once.

The Imperial Standard makes a strong plea for the location of an asparagus cannery in Imperial. Asparagus grows to perfection in that locality and has proven very satisfactory to producers.

One of the largest ranchers in Riverside County makes the statement that the growers of hay and grain should sow more oats. He thinks that oat hay is much superior to barley as a feed, claiming that stock does better on this hay than on barley.

A correspondent from Verden states that the asparagus cannery in that place has been compelled to resort to glass fruit cans, owing to the fact that its ordinary tin cans were burned in the San Francisco fire, but as many housewives prefer glass cans to tin, it is thought asparagus put up in this way will be very much desired by the general trade.

The ranchers in the Coachella Valley are in a high state of anticipation for the future of the asparagus crop. They think it certain that asparagus will be the most profitable crop in that section of the country. It has been selling at 70 and 75 cents per pound in New York and this fact has created a widespread interest in the future of the asparagus business.

LIVE STOCK.

The Tehama Wool Growers' Association has cut the heaviest clipping of wool this spring received for several years and the price will range about 25 cents.

The Escondido Times reports in its last issue the shipment of eggs for the week as 5,310 dozen; butter, 1,170 pounds; cream, 2,650 pounds; chickens, 1,500 pounds. One farmer sent to market from his ranch 2,450 pounds of green beans.

Stockmen are complaining that their young hogs are dying from poison in green barley in the Imperial Valley. The hogs die in about twenty-four hours after they have eaten the feed, and the question which disturbs the stockmen is whether the poison is in the barley or in the grass.

A decided increase in the output of the Colusa Butter Company is shown in their April report—28,600 pounds of butter made during the month. This shows that a great many farmers are going into the dairy business on an extensive scale. An effort is now being made to run a ditch south of Colusa and irrigate about 2000 acres.

MISCELLANEOUS.

San Bernardino's School Census Marshal estimates the city's population at 15,000.

Escondido's railway proposition is looking extremely good, and indications are that it will be promoted with energy.

Buildings to cost $5,000 are now under contract at the Santa Monica forestry station under direction of the regents of the state university.

The Iowa legislature has made an appropriation of $15,000 a year to the State Agricultural College of that state for agricultural extension work.

Edgar F. Howe, who recently bought the Imperial Standard, announces that a daily will be issued from that office as soon as material can be secured.

An Eastern manufacturer is coming to Los Angeles to establish a malleable steel plant. A new plan has been discovered and it is claimed the process saves $4 a ton in the manufacture of steel.

An event of horticultural importance took place at Salem two weeks ago when the Oregon Nursery Company planted enough walnuts grown on grafted trees to ensure the raising of 125,000 trees.—Agriculturist.

The Rural Press comes to our table this week as showy in brains and courage as ever. San Francisco may burn down, but the Rural Press will keep right on giving its readers the same profitable instruction it has always given.

The United States Smelting, Refining and Mining Company at Kennet, Cal., which is said to be returning the United States Company between $130,000 and $150,000 net per month, is planning to nearly double its present capacity.

The Government of the United States has made a requisition to ship to San Francisco 930,000 rations of bread, 800,000 of sugar, 600,000 of coffee, 1,400,000 of potatoes, and 500,000 of beans, and this amount will last only about ten days.

Senator Rowell of Fresno thinks there is no hurry about an extra ses-session of the legislature. In reply to Senator Ralston's telegram asking him his views, he wired: "Keep your shirt on. Time enough for extra session after sober second thoughts."

Some time ago the Board of Trade of Pottowattomie County, Iowa, offered a bounty of 8 cents a head for gophers and as a result one day 490 pairs were presented for bounty, and it is said the average rate per day is nearly as high, which shows that farmer's sons are making good money catching the pestiferous little creatures.

The choice of Dr. James Withycombe as the Republican nominee for governor at the recent primary election in Oregon is distinctly a victory for the farmers. Dr. Withycombe became known to the people through work directly relating to agriculture. He stood out as a candidate representing agriculture to a degree which rarely happens.—Oregon Agriculturalist.

LINER ADVERTISING

Advertisements in Liner Column will be charged 1¼ cents per word. No advertisement taken for less than 25 cents. Eight words to a line.

LINERS

ANCONA EGGS (FROM PERPETUAL EGG Machines), imported and domestic matings, $2, $3.50 and $5.00. L. L. Viereck, Pres. Ancona Club, Albany, Oregon.

WANTED—WILD TURKEYS EGGS AT $100 00 per setting. Address only The Grace Glory Grounds, Brawley, Calififornia. Wilds of wildTurkeys (acclimated).

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FOR SALE—30 HORSE POWER OTTO Gas Engine. Run one season, practically new. Also one 30 horse power White Middleton. Both engines guaranteed in best condition. F. H. Osler, Pomona, Cal.

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COLUMBIAN WYANDOTTE EGGS FROM winners; first ckl.; first pullet, New York; first, second, fourth, and sixth pullet; fifth cock at Boston. Eggs from $2.00 to $5.00 sitting. Send for circular. Prof. John Evans & Son, Meshanticut, R. I.

FOR SALE—WHITE MINORCAS EGGS $1.50 sitting from one of the nicest pens of Wh. Minorcas in Southern California. Lay the most eggs and the largest-whitest eggs of any breed. Call and see them at 547 W 54 St., or address 1004 E. 9th St. Also incubator chicks for sale.

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First National Bank, Los Angeles, Cal.

Live Stock and the Dairy

BY MRS. MINNA. E SHERMAN, FRESNO, CAL.

THE MILKMAN.

The problem of selling milk from the dairy with a view of making it a profitable business and at the same time making the endeavor financially profitable proposition is one which the milkman finds it difficult to solve. The good value of milk is easily destroyed by contamination. Milkers, as a rule, are an ignorant and dirty class. The prices usually paid for milkers will not secure the employment of high class labor in this field. The actual work of a milker by reason of the unusual hours at which milking has to be done as well as the strength required, commands a physical endurance which is difficult to find in persons of old age or those who have led sedentary lives. Hence, we find that poultry raising, truck gardening and other callings are resorted to by the dairyman to help out the expense of living. It is safe to predict that the present sanitary regulations will not be relaxed but we have every reason to believe the Health Department of our State and counties will be more insistent in encouraging sanitary conditions Therefore it is reasonable to expect that the price of milk will increase rather than decrease. Many of the small dairies operated by the owner and his family would not pay if the proprietor employed help and were the family to hire out to work the members thereof would be better off financially.

The recognition that steam is the only perfect cleanser of milk utensils and that a sanitary dairy must have a boiler, eats into the small dairyman's profits. The price of milk has not advanced to cover costs of aerators, engines, boilers, separators and white duck suits for the milkers, so at present the issue has been forced back to the cow and we are all scrambling to force her to greater production and are culling out all animals not reaching a high standard of production.

If the price of milk is forced upward probably other foods would be substituted in a measure for it. Take the parallel case of meat. The prices soared up a couple of years ago, the men growled but the women cut down the amount of meat used substituting other food stuffs—the American meat breakfast gave way to the French coffee and rolls for the first meal. When the Beef Trust found decreased consumption had used up the profits of the advanced prices, the prices returned to nominal, but the increased consumption did not follow, for the women found that more fruits, vegetables and cereals not only gave more variety, but also gave the family better health. Again, "The hand that rocked the cradle rules the world."

* * *

A sanitary dairy must have steam—a boiler is as necessary to make the milk perfect as the cows are to produce it. The coming of steam brings the dairyman into line for the milking machine. The wages now paid to several can then be paid to one man and he can be selected from the cleanly skilled class. His position will be more like the buttermakers, for he will care for his milking machine—running it and then care for the aerated cooling and bottling of the milk—while the cow feeders, grooms and stable cleaners will be different men.

The demand for a practical milking machine is real, and if those now being tested prove valuable, enough of them will be sold to make it profitable at once. So heart broken dairymen be patient, for the many troubles we are now enjoying seem to be nearing an end.

The relief will be great to the consuming people for the contamination of milk by hand milking is unavoidable, and with ordinary milkers it seems impossible to make clean in their work with constant supervision. Every dairy owner has at times to put up with their annoyances for if he pushes the milkers too much they leave and the cows are unmilked—so for policy sake he must endure, when he is burning to kick out the whole crew. But let us be a little charitable for we have more to thank the environments of our childhood for our own training than any merit within ourselves.

• • •

The Homes of the Milkers—The more the home life of the families from which the milkers come is observed, the less can we blame them, for raised in unsanitary homes, they look back to "the day mother died" as the best of all. Poor old woman, deep was her grievance. She tested the temperature of the cream and milk with her bacteria-laden fingers. How little elderly women, even educated ones, realize the new science of germ diseases. I saw the following the other day. In a home of some pretentious on a beautifully spread table an elderly relative of the hostess deliberately took her clean napkin, moistened it at her mouth with saliva and wiped from the spout and side of the cream pitcher the cream the maid had carelessly spilled on it in filling. After publicly doing this, the old lady politely handed it to a guest at her side to have the first pouring out. The elders action was unconscious of any impropriety or that there could be any objections to this way of removing a few little cream drops that were out of place. There rose in my mind the story of the Boston school teacher that boarded around. She lived on soft boiled eggs and baked potatoes, thankful that the Good Lord had put "coats" on these, for man's protection against the cook's lack of precautions for these wore coats.

* * *

The Family Milk.—The stables must be clean and free from odors and if only one or two cows are kept the milk is safe from contamniation if bottled. The milk can be aerated by pouring from the bucket or pail, through a wire strainer, fastened on an iron trepod three feet above the pans. When first pouring it through use a double piece of cheese cloth to strain through, then repour the milk through the wire strainer into the pans, leaving off the cloth. A large sized dishpan with a small outlet soldered at the side is convenient. Close this; pipe with a rubber cock; after the milk has been cured, then fill as many jars as needed for family use, putting on the regular paper caps and stand in refrigerator where milk has been used without being aerated the improvement is noticed, all cowy taste has gone and the milk has a delicate flavor and aroma like nectar.

The milk intended to raise cream for butter is put into shallow pans and set and skimmed as usual. When there is only a cow or two, if the milk set for butter is not skimmed until it is thick and slightly turned it is less wasteful. The cream intended for the table can be screened by having a small pail at the barn and milking the stripping into it directly from the cow. This will give a sweet cream about 14 per cent. butter fat, that is about the average in use on farmers' tables.

Another dainty is Devonshire cream eaten with bread and maple syrup or strawberry jam or on fresh fruit. It is excellent. The making of this dainty dish will test the condition under which the milk is kept. The new milk is strained in pans about four quarts in each and put into a room where the temperature is about 60 degrees for twenty-four hours. The pan is then set on wooden slats to prevent burning in a pan of boiling water, it is placed on the stove, and in about thirty minutes the outside water will reach 180 degrees but this can be told by the cream crinkling; as soon as it does that remove the pan carefully to a cool place and let stand for twenty-four hours, then take off the cream and cut in slices and serve. If there is any left over, it makes a good salad cut into blocks on lettuce with mayonaise, or it can be sliced thin and put in layers with cottage cheese in the butter moulds. Take the three inch tin cheese moulds; put on a plate; press in cottage cheese, well seasoned and moistened with sweet cream; put in a layer of the Devonshire cream, then a layer of cheese until the mould is full; turn a saucer over the top and put on ice. Eat as cheese or slice on lettuce on a bed of orange or apples with mayonaise. For a fancy salad, if the cottage cheese is colored with spinach juice, it will come out beautiful marbled and can be used to decorate a tomato salad.

REGISTRATION AND BREEDING

Why register stock? To the progressive breeder of any sort of live stock, registration of pedigrees is such a matter of course that this question is likely to provoke a smile. In view of the fact that there are seventy associations in the United States formed mainly for the purpose of keeping accurate records of pedigree—fourteen for cattle, seventeen for horses, twenty-two for sheep and seventeen for hogs—surely the benefits of and necessity for registration are pretty generally understood. Yet it is not so easy to answer the above question offhand.

That the market value of an animal is usually enhanced by the fact of its registration, as registration offers a reasonable guarantee of purity of blood, is but one of the least important reasons that may be given; and the registration fee is but a very small proportion of the value of a blooded animal. It may also be pointed out that an unregistered herd is neces-

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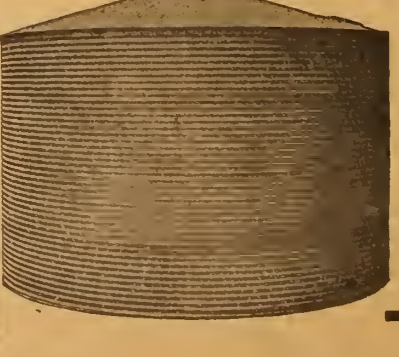

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sarily an obscure herd, as the animals composing it are debarred from entry in the show-ring or the breed contest as pure-bred animals, no matter with what care the purity of their blood may have been guarded. But there are other reasons than these.

Different types of horned cattle have been known for at least 4,000 years, and at the present time there are over one hundred known breeds or varieties, and the characteristics which differentiate one breed from another have been produced by the intervention of man in their propagation, usually by breeders with definite ends in view.

Registration is the recording of breeding or pedigree, and without a permanent and public record of ancestors breeding is necessarily more or less indiscriminate, the breeder working in the dark, and is therefore unlikely to bring about any improvement in the breed. Without registration there can be no secure scientific basis for breeding intelligently, as there can be no tracing of blood lines or examination of the records of ancestors. Indeed, no breed could for very long be maintained true to type without registration.

Of course, an individual could keep all the records of his own herd, but the life-time of the individual is all too short to work out the problems of nicking, crossing, etc., that face the ambitious breeder, to say nothing of the fact that many men are already in mid-life before they take up the work at all.

Clearly then, breeding must be largely a work in which one lays the foundation and another builds thereon. The progressive breeder works not only for himself, but for posterity also; so it is all-important that the results of his work be made matters of public record. Present-day breeders are building on foundations laid by far-seeing and public-spirited men long since gathered to their fathers. They have provided us with a basis to work on, as we in turn must provide a basis for those who follow us, if mankind is to continue to progress in this line or in any other.

Such a demonstration of dairy cows as that given at the Louisiana Purchase Exposition could have little or no value unless accurate records of breeding had been kept in the past and will be kept in the future, indeed, such a demonstration could never have been made at all. Without the Stoke Pogis's, St. Lamberts, Tormentors, etc., no Brown Bessies, Merry Maidens or Loretta D.'s would have been possible. All honor to those enlightened men who established our Jersey Herd Register and our other herd books, and put on record therein the foundation stock!

But, as already suggested, the work of the man who breeds and registers too is not altogether altruistic. There are substantial personal rewards for him at hand, in the lines of both profit and honor. His work, too, is broadening with the years. Records of breeding looking to preserve purity of blood merely, no longer suffice. A step forward has been taken, and records of performance, independently authenticated, and of individual excellence, are now demanded as bases for such future breeding as will be effectual in raising the standard of dairy breeds. In consequence, the breed associations have been establishing Registers of Merit and Advance Registers. For it is getting to be recognized generally that pedigree alone is without much significance unless the performance of the ancestry can be given also.

The work of the breeder, besides offering inducements as a profitable pursuit, is now so important to the welfare of the community, and its results are likely to be so permanent in value, that it is capable of worthily exciting the ambition of all who are attracted towards agricultural pursuits, whether as professionals or amateurs, and it is one of the most useful, most ancient and most honorable of human occupations.

R. M. GOW.

Advertising Column for Members

OF THE

JERSEY BREEDERS ASSOCIATION

OF SOUTHERN CALIFORNIA

Organized for the general advancement of Jersey interests, to extend knowledge of their superior merits, for the mutual benefit of members, and to increase the profitableness of one of the State's greatest industries. Breeders are requested to unite with the Association.

FOR SALE

A registered bull calf, 6 months old and a beauty. Uniting the blood of the famous World Fair champion cows Ida Marigold and Brown Bessie combined with the Sweepstakes' Bull Pedro.

No finer combination in breeding can be found in the State. This individual is fit to head the best herd. Detailed information on application.

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BULL FOR SALE

Having sold my ranch I am forced to sell Golden of Biltmore. 60082, a grandson of Golden Lad's. Golden of Biltmore is one of the best, ***if not the best*** sire on the coast, several of his daughters less than two years old selling for over $200 each. Highest bidder for next sixty days takes him. If everything is not just as represented, I will give anyone the ***bull free of charge. I sell on merit.***

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Pure St. Lambert Bull

—ST. LAMBERT OF RAMONA, No. 62633,—

heads the Ramona Herd of Registered Jerseys of

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Have moved their herd of Jerseys from San Bernardino, Cal., to the famous Imperial Valley, and hereafter their post office address will be Heber, San Diego Co., Cal., from which they will conduct all their business. Abundant green feed every day in the year will be of great advantage in the best development of our young stock.

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Service bull "SARGENT FOX," 64833. Bred on the Island of Jersey. Sire, the great Flying Fox, that sold at auction for $7,500. Dam, Miss Sargent, reserve winner over Jersey; winner of seven first prizes and five championship cups. "One of the grandest cows the island has ever produced."

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For Sale, yearling bull Ruth's Gordon King, No. 72360 A. J. C. C. He is of richest breeding on both sire and dam's sides. Also three richly bred heifer calves by Marigold's Exile King, from cows that are good yearly producers. For particulars write

GUY H. MILLER, RIVERSIDE, CAL.

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Sons of imported Golden Marquis out of prize winning and tested dams. for sale.

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At head of herd. Young stock for sale.

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The Cutter Analytic Laboratory, formerly the Rialto Building, San Francisco was burned out losing all their office equipment. They will be found at their laboratories located at Berkeley, near Grayson and Sixth sts., west of San Pedro Avenue. They are all right and doing business right along. Address them above.

Veterinary Instruments, Black Leg and Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

TREATMENT OF LOUSY LIVE STOCK.

Farm stock that become badly infested with lice during the winter months do not thrive as they should, and in the spring may show marked unthriftiness. This is especially true when stock are not well cared for and in young animals.

The sucking lice are more harmful that the biting varieties, as the former have mouth parts adapted to penetrating the skin and sucking the blood of the host. However, the symptoms may be as marked in sheep and other animals that are badly infested with biting lice. In such cases the wool or coat becomes matted and detached, and the skin irritated and inflamed as a result of the animal rubbing, biting and scratching the parts.

Good care during the winter will prevent the lice from doing a great deal of harm, and the simpler remedies, such as mercurial and sulphur ointment rubbed back of the horns or ears and along the mane and back, and insect powder dusted into the coat, may help in destroying them. A thorough treatment of the herd with dips or washes cannot be practiced during the winter months, unless the treated animals are prevented from catching cold. A favorable time to use this line of treatment is in the spring. A one or two per cent water solution of a tar disinfectant should be used. A convenient way to apply the remedy in the larger animals is with a spray pump, and in sheep and hogs by dipping. Whatever method is used, the coat and skin must be thoroughly wet with the solution. Proper care should be taken in mixing the remedy, as there is danger of making it too strong and irritating the skin.

After treating the herd, the stables, sheds, or sleeping quarters should be sprayed with about a two per cent. water solution of the disinfectant, or whitewash may be used instead. This is necessary in order to prevent re-infecting the herd from the surroundings. If there is much litter around the yards and it cannot be gotten rid of, it is advisable to move the herd to other yards. Tar disinfectants in one or two per cent. solutions do not destroy the eggs or nits, hence it is necessary to treat the animals again in ten days or two weeks.

Stockmen sometimes ask if the feeding of sulphur to lousy animals will not drive away or destroy the lice. The feeding of small doses of sulphur will do no harm, neither will it help in getting rid of the lice, and it cannot be considered a remedy for this class of disorders when used in this way. Sulphur is effective, however, when used externally, and the addition of four ounces to every gallon of the tar disinfectant solution used greatly increase the effectiveness of the remedy. —Richard A. Craig, veterinarian Purdue Experimental Station.

The salty taste of butter is always more pronounced in the summer than in the winter. This is no doubt due to the fact that in summer the butter, being much softer, takes up and incorporates the salt more readily than in the winter, when it is harder.

The only way to succeed in dairying is to keep up with the times. Falling behind the procession is what causes so many dairy farmers to end each year in debt.

See Us for Sanitary Milk Bottles. O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

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32 Head Fine Milk Cows, Holsteins and Durhams, a few choice Jerseys; large rich milkers, mostly fresh, balance coming in within 30 days. 6 Head Fine Heifers. This is as fine a lot of dairy or family cows as can be found in the county and will absolutely be sold to the highest bidder, as I am quitting the dairy business.

TERMS—6 months time will be given with note and approved security. Free Lunch at noon.

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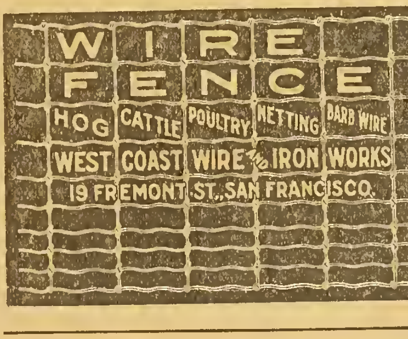

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Four thoroughbred bull Calves from (6) six weeks to (3) months old, De Kol Strain. For information see or write
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Berkeley, California

Profit in the Poultry Yard

BY MRS. A. BASLEY, HOLLYWOOD, CAL.

THE HOUSE PROBLEM.

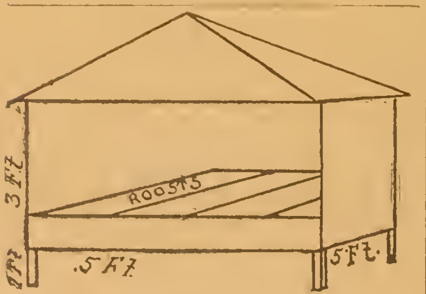
Two unlucky widowers have, since I have been writing in the Cultivator, asked my assistance in finding them partners, the necessary qualification being a love of poultry, and dozens of correspondents have requested plans for houses. The house problem I am willing to talk over (especially with L. P. L., whose letter is before me); the matrimonial ventures I must decline to promote.

In the matter of housing our Pacific Coast conditions are favorable to the building of much less costly henneries than are necessary in the East. There, about a dollar per head is the least estimated cost of the house, built to withstand the ice and snow and zero weather. Whilst in sunny California less than one-fourth of that amount will shelter birds comfortably and in neat looking houses.

All of our correspondents want inexpensive houses and most of them wish to use the colony plan of small houses for each pen or flock. This simplifies the matter, for so great is the variety of the plans of houses designed for fowls that it would be impossible to even mention them all in a short article. We will therefore confine our talk to only a few of the cheapest and most satisfactory small houses adapted to the climate of California and possibly they would be found quite satisfactory for the whole of the Pacific Coast.

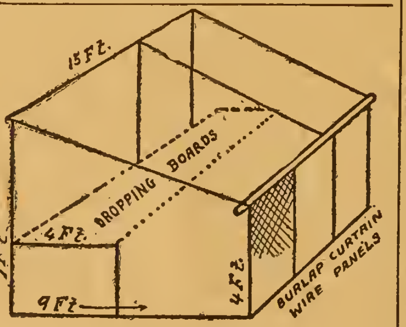
The first requisite here is plenty of fresh, pure air without any draught, in other words, perfect ventilation. The second requisite is that the house be practically vermin proof, easily sunned and easily cleaned or moved. Many of the artistic looking houses plans of which may be found in poultry books were planned by men who never owned a chicken and if built in this or any other climate would be highly unsatisfactory. The plans that I shall describe have all been used here either by myself or by successful poultry raisers and I have seen them all.

The first requisite in the house is pure air. To get this the ventilation must be at the bottom. But, says one, I thought the bad air ascends. This has been proved a mistake, the foul gases descend, the pure air and the warm air are lighter, and they rise; we want to keep them in, but if we have an opening for ventilation at the top of the house we lose the wartmh, and to make up for this loss the hens will require more food or will lay fewer eggs. The ventilation must be at the bottom or one entire side of the house may be left open.



Mushroom House

The accompanying rough little cut of a "mushroom" house will give some idea of the bottom ventilation. Houses like this were used by a friend of mine, the successful man of whom I have written. He made a light frame five feet square, this he either boarded up or covered with canvas and the roofs he made of some tin he had or of rubberoid roofing. He left a space below of ten or twelve inches all around. Where foxes or like animals may molest, a strip of wire netting around the bottom will make it safe. These mushroom houses were tipped over every day to be sunned or cleaned. I improved upon this plan by making a door of the whole of one side for I wanted to be able to handle my fowls at night without tipping the whole house over. Perches should be placed about twelve inches above the open space and in the case of heavy breeds, a run board or small ladder should be placed for them conveniently to reach the perches when going to roost. The advantages of such a house are lightness, it can be easily moved and free circulation of air without draughts on the fowls. The "mushroom" houses can be covered with matched lumber, shakes, canvas, burlap, rubberoid, or even common domestic muslin. These houses can be all painted with crude petroleum thinned with distillate oil or coal oil and colored with Venetian red. In the "mushroom" house the droppings of the fowls fall on the ground and the effluvia from them is carried away by the air passing over them. There is no bad smell in these houses.



Open Front House

The second cut is of the open front house. This is admirably adapted to the California climate and is now meeting with favor even in the rigorous climate of the East where poultry raisers begin to realize the value of fresh air without draughts, as a necessity if you want vigorous hens. In the colder climates these houses are made much deeper, that is to say, about fourteen feet from the open front to the back, instead of nine feet, as are mine. I have been using these myself for over a year, although keeping only a few hens and white Holland turkeys for my own use, so I can speak confidently of their good qualities. When I was in San Jacinto, I found that Mr. Hoffman, whose Buff Wyandottes were a picture of health, vigor and beauty is using similarly constructed houses, only his are rubberoid and mine are matched lumber. In his the roof is first covered with two inch chicken wire to support the rubberoid. At the bottom and next to the ground it is boarded up for about two feet all the way round, this is to keep in the straw, for all the floor space of the house is used as a scratching pen. The sides and back above these boards are made of panels of rubberoid nailed on light frames. These panels are taken down on all fine days to sun and air the

200-250 Egg Fowls | **WHITE WYANDOTTES** | 16 Prizes San Francisc

Scored by one of the greatest of Madison Square judges, our White Wy dottes have stood the test and are supreme on the Pacific Coast.

In 30 consecutive days, ending April 24th, "Madam White," 1st prize and "one of the ten whitest birds in the U. S.," laid 26 eggs, all of which at $1.00 each.

Eggs, $3.00 and $5.00 per 15. Incubator lots, any quantity, $10.00 and $1 per 100.

Express prepaid, 100% fertility guaranteed **Discount of 33⅓%** May orders. Beautiful **Circular** and mating list free.

CAPITOL AVENUE POULTRY FARM

A. L. R. MANTZ **Rural 21, Box 98k** **SAN JOSE, C**

EGG FOOD A.C.W. IT FILLS THE BILL

Do You Know

That there are in many cases three and four grades of rice, millet, Kaffir corn, wheat and all the other ingredients that enter into a properly made Chick Food. Even charcoal can be the best "willow" or poor stuff made from "any old wood." This information is what is known as a trade secret. All our raw materials have to pass a careful inspection and be A1 grade before they are mixed; no shrunken wheat with no nourishment, or inferior millet goes in A. C. W. Examine the food and see for yourself. Feed it to your Chicks and see how they will thrive—notice the absence of bowel troubles, owing to the mixing of certain materials in the proper proportions to prevent this. We have hundreds of satisfied customers from San Diego to Watsonville that say A. C. W. Chick Food and other A. C. W. products for poultry are **good, honest goods.**

Agricultural Chemical Works

Office and Factory, 901-907 Macy Street, Los Angeles, Cal.
Phones—Home 6063, Boyle 3

PER 2 BUSHEL SACK **$1.90** **PER 2 BUSHEL SACK**

BUYS THE WORLD'S FAMOUS EGG FOOD NO. 4

MIDLAND

IF YOU WANT EGGS
YOU WILL FEED NO OTHER

Used by all the largest and best breeders in the country. Thousands of poultrymen are using it, and it is tne acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the GOLD MEDAL at the St. Louis World's Fair for greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1604.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A FILCHER, Commissioner.

And Now Comes New Reward for Merit:

Read the following telegram received from the Lewis & Clark Exposition at Portland:

"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

PETALUMA INCUBATOR CO.

Main Office and Factory, Petaluma, Cal., Box F. Los Angeles, 505 South Main Street
San Francisco Office and Salesroom, 33 Market St.

Buff Wyandottes
Eggs from pens mated with 2nd prize Cockerel or 2nd prize Pen L. A. Show, $2.50 per 15. Stock and yards at San Gabriel. **Wm. J. Bodger, 251 S. Main St., Los Angeles, Cal.**

Blue Andalusians
From prize winning and egg producing strains. Eggs, $1.50 and $2.00 per 15; incubator lots, $6.50 per hundred.
C. E. Chittick, 124 Avenue 34, Los Angeles, Cal.

Brown and White Leghorns
Prize winners at L. A. Show, '06. Eggs from good laying strains. Eggs, special matings, per 15, $2.00. Incubator lots, $6.00 per 100.
Hemet Poultry Yards, Hemet, Cal.

BUFF LEGHORNS
Eggs for hatching from the famous J. W. Miller strain, Freeport, Ill. $1.25 per 15
CHAS. G. MILLER, 40 Elm St. WATSONVILLE, CAL

White Wyandottes and S. C. White Leghorns
Good layers. Trap nests used. Eggs: Wyandottes $1.50 to 2.50 per 15. Leghorns $1.50 per 15.
J. F. GOETTING, EL CASCO, CAL.

WHITE AND BUFF Leghorns
Old and young stock for sale. Eggs after January 1. Write for prices.
J. F. Sarmento, R.F.D. Box 4, San Leandro, Cal.

WILLARD POULTRY FARM, HYNES, CAL.
Mrs. F. T. Hungerford, Manager
14 Ribbons at The Last Los Angeles Show.
Indian Runner Ducks' Eggs:—$1.00 per 13, $3.00 per 50, $5.00 per 100. White Minorca and White Wyandotte eggs:—$1.50 per 15, $4.00 per 50, $8.00 per 100. Eggs carefully packed and shipped any where.

BARRED ROCKS
EXCLUSIVELY
Send for 16-page 1905 Catalogue
H. R. CAMPBELL
Box O PETALUMA, CAL.

WHITE MINORCA EGGS
Best of Stock. Great Layers.
$1.50 setting, $8 100, $65 1000.
S. W. MORGAN,
Sunnyside, San Diego Co., Cal.

Mountain View Poultry Ranch
S. C. White Leghorns—Heavy layers. Eggs, $1.50 per 15, $5.00 per 100.
Indian Runner Ducks—Males for sale. Eggs, $1.00 per 13, $3.00 per 50, $5.00 per 100.
Mrs. J. L. Updyke - Fullerton, Cal.
Successor to Jacob Kreger

Fairview Poultry Yards
Special offer of breeding stock. To make room for young stock I offer two pens of my select White Rock breeders, each consisting of 6 fine 2-year-old hens and a splendid yearling male, at $12 for the pen. Or, if preferred, will sell one pen of 6 extra good yearling hens with vigorous 2-year-old cock at same price. These birds will please you.
A. E. NELSON EL MONTE, CAL.

New Hatchery
Baby Chicks
White Leghorns, 10c each. Large orders a specialty. Eggs from fine, large thoroughbred stock. Terms cash. Order now.
Wm. A. Green, Azusa, Cal.
Home Phone 5184

Get More Money for Your Eggs

Hager's Egg Preservative is unquestionably the only one on the market that will keep ***fresh*** eggs ***fresh.*** It costs ***only one cent per dozen,*** sold on a strict guarantee to do as claimed or money refunded.
Write today for booklet with full instructions and ***sample package.***
Hager's Egg Preservative Co.
St. Louis, Mo.

house. The panels are kept in place by large wooden buttons. The front is entirely open or only closed with chicken wire except when it rains, then a burlap curtain is let down. The dropping boards are placed at the back about two feet from the ground; they are four feet wide and the perches are six inches above them. This is fifteen feet by nine feet, it is seven feet high at the back and four feet at the open front. This is a double house divided in the middle by chicken wire, each side will hold about a dozen hens very comfortably.

Another and very substantial house can be made of two piano boxes. The simplest way to make such a house is as follows: Removing the backs of the piano cases, use one-half of one back for additional floor, placing the cases back to back on light sills about thirty inches apart. The other half will make a door for one end. The other back furnishes the lumber needed for the gap between the cases on the roof and other side. Cover the roof with rubberoid roofing paper, and you have a comfortable house at small cost. In this climate the front of the piano box house should be either hinged so it can be kept open all the time except when the rain may drift in or it may be entirely dispensed with and turned so that the night breeze will not blow into it, or a burlap curtain may be used to keep out the rain.

In any house in this climate, pure, fresh air with absolutely no draughts is the only way to keep the hens healthy and have them immune from roup. We know by experience how very easy it is for humon beings in this climate to get neuralgia, earache, face ache or cold from sitting in a draught, it is exactly the same with fowls; they take cold, their head swells and the poor things suffer great pain and finally succumb to roup.

* * *

EDITOR'S QUESTION BOX.

White Wash and Paint. (L.) Will you be so kind as to give me a receipt for a good cheap paint for chicken houses, and also the formula for a white wash that will not wash off. Please answer me under "L," and thanking you in advance for your reply.

Whitewash.

The Poultry Manual gives the following on whitewashes. For many years there has been going the rounds of the press of the entire country a receipt for a so-called "government whitewash." The wash compounded according to the formula given is said to be used by the United States authorities on light houses, etc. Several ingredients are used, including boiled rice, glue, etc., etc. Excellent whitewash can be made easily with only the addition of salt to the lime. Glue or paste will, in this climate, at least, cause whitewash to flake off in time.

One secret in making good whitewash is in slacking the lime with hot water, confining the steam and letting the mass cook slowly for a day or two. A week would be far better and a longer period will make a further improvement.

For several years the writer has made a whitewash which is unrivaled. It will stand the wear and tear of the elements for a long time. And one, by adopting the following formula, cannot help attaining success.

In a tight barrel put five or six gallons of boiling water, hot water in which has been dissolved four or five gallons of coarse ground salt. Into this put a large pailful of the best lime obtainable, the large lumps broken into quite small pieces. Immediately cover the barrel and place over the cover a heavy weight in order to keep it in place when the lif is slacking, for the uplifting power of the boiling mass will be surprisingly great. After a few moments uncover and stir the mixture to the bottom with a long stick and then recover and keep closed for a day or two. When fully slacked the lime should be of the consistency of cream. When applied to the henhouse it must be thinned with water to consistency of paint. If too much water is used in slacking the lime will be "drowned" and the resulting wash will be thin and watery. If not enough water is used the lime will "burn" and granulate. If properly slacked the mass will be smooth and free from lumps.

When applying the whitewash dip out a sufficient quantity into a pail and then stir in a handful of cement. This will cause the wash to firmly adhere to the surface, to which it is applied. It will be of dazzling whiteness and will "lay on" like paint.

An excellent plan when the whitewash is to be used around the hen house, chicken coops, etc., is to put in a liberal supply of carbolic acid.

This may appear to some a lengthy description of the simple process of making whitewash, but any one will find the recipe first-class. The old-time method of slacking lime with cold water and applying the weak solution is very unsatisfactory.

The best and cheapest paint that I have used is ten gallons of crude petroleum, such as is used for oiling the roads here, 50 cents worth of Venetian red and two gallons of coal oil. I mix the Venetian red with coal oil and add it to the crude oil. The paint is a rich chocolate and has lasted me six years. The petroleum I dipped up from a slump hole and cost nothing, the coal oil cost about 20 cents, and the total cost about 90 cents. I know of nothing cheaper.

* * *

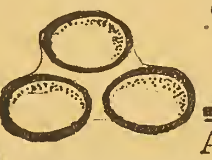
Taking Cold. (An old subscriber,) Will you please tell me in this week's paper what ails my chickens? They open their mouths when they breathe and act as though their throats were closing up. There is no discharge at the eyes or nose, both seem perfectly natural. I have lost two hens in the yards and three or four of my sitting hens had it, but seem to be well now. I gave them blue stone in the water and a piece of bacon rolled in red pepper twice a day and have kept the blue stone in all water, but now my little chickens are taking it and I cannot give them the meat so well as I have near two hundred. What can I do to keep it from spreading, and what is the matter?

Answer. Your chickens and the hens also have taken cold. The colds instead of assuming a cataharral form with running at the nose, have gone into the bronical tubes or lungs and the chickens have either bronchitis or

Continued on Page 454

CARLOAD
"Old Trustys"
Train Wrecked! Profits Thrown Away! Read!
A whole carload of the Old Trusties was held at the washouts in Utah by the Salt Lake railroad for 28 days. The car arrived so late that we wish to move them quick and have made the ***lowest prices*** ever made on the **"Old Trusty"** Incubator. Investigate, that's all we ask. We will sell the remainder of this car at cost price and still we pay the freight. Get the big free 124 page book and free trial offer. Now is the time if you wish a good reliable incubator.
NOW OR NEVER

FREE TRIAL TO ALL
FACTS—The Old Trusty Incubator is made at Clay Center, Nebraska, by M. M. Johnson, one of the oldest incubator men in the United States. We have sold 12 different makes of incubators, but for the last 7 years we have been selling Incubators made and patented by Johnson. Our free trial offer proves they do the work. Get the big free book, anyway. Investigate, that's all we ask.
McCLANAHAN CO., 709 SO. MAIN ST., LOS ANGELES



Two Eggs in place of ONE
AND right in the WINTER TIME too, when EGGS are 30c to 40c a dozen—
But more often it's THREE or FOUR Eggs in place of one, if you use
PURINA POULTRY FEEDS
Because they are prepared according to Nature's Laws, from the HEN'S STANDPOINT, and have been TESTED by feeding until perfect—until you can depend on them for RESULTS from EVERY HEN, EVERY TIME.
Feed of the same chemical analysis as Eggs won't make Eggs. Any more than Ground Leather will grow big crops, though chemically rich in Nitrogen.
No need to make expensive PERSONAL experiments any more—when every egg you should get and don't get is that much money right out of your pocket.
For Purina Feeds have been TESTED FOR YOU—prove our claims at OUR EXPENSE.
If the RESULTS don't come, just tie up the bag and write us, and we'll return every penny of your money, and tell you what to do with the unused feed. You are not out a cent in making the trial, for we will supply you through your dealer or direct FREIGHT PREPAID and the feed used will cost you nothing.
This is the Money Back Line——
Ask for particulars about our Free Test Plan. Write today.
ACME MILLS CO.
PACIFIC COAST MANUFACTURERS
PORTLAND, OREGON

Banning Poultry Yards
Wanted—To Exchange, 20 Barred Rock hens and 2 Barred Rock cockerels for same No. S. C. Wh. Leghorn hens and cockerels. Correspondence solicited. **Morris Bros., Banning, Cal.**

Buff and Black Orpingtons
Buff and Brown Leghorns
Indian Runner Ducks--Bronze Turkeys
Eggs and Young Stock in Season
W. W. Bliss - Duarte, Cal.

The Breed for Profit The Breed for Beauty
THE NEW AND POPULAR
Columbian Wyandotte
Eggs $2.50 per setting for balance of season
A few trios at reasonable prices.
Box 265 ED. M. BURNELL
South Pasadena, Cal.

A POULTRY COLONY
NEAR LOS ANGELES HAS BEEN FORMED
for mutual benefits. Situation unexcelled; plenty of good water, splendid soil and close to town. Only a few acres left. Apply at once to
Anna L. Pinkerton
Realty Trust Company, 129 So. Broadway, Los Angeles, Cal.

HOW TO MAKE POULTRY PAY

There is no get rich quick scheme in poultry culture. To make money out of it we must confine ourselves to plain every-day methods, do our own work wherever we can and learn before starting that our individual intelligence must govern our action. It is not the work for the idle boys, invalids or cripples. There is no dreamland, sunny side of easy street or bouquets of roses connected with the management of a paying poultry farm and we believe that at least 95 per cent of those who embark in the business do so with the hope of making something out of it. While there are specialists, theorists and fanatics that go in the business for fun or experiment, they will not average five per cent of the total that join the ranks of poultrymen every year. The 95 per cent who are in the business for profit are desirous of learning how to make poultry pay and in this series of articles we will try to give advice that can be depended upon to give good returns on the investment and tell you what you must not do if you expect to succeed.

There are many mistaken ideas about poultry culture and we believe there has been more money wasted by over enthusiastic fanciers than in any one business we have any knowledge of. When people become interested in poultry for the first time, or, as we commonly express it, "get the hen fever," they seem to lose, for a time at least, the good common sense that has guided them in other business ventures and jump in heels over head like a boy in a swimming pool. They go in as though they imagined the business was going to the dogs in about ten days and they must get in on the ground floor while the tide is on. They live and buy everything that is offered, whether they need it or not, and swallow at a gulp every ad. for food and medicine that chances to come to their notice. From some of the purchases made by beginners one would think they were starting an apothecary shop rather than a poultry farm. This craze to give money away or waste it in foolish purchases has done more real harm to poultry culture than all else. To this craze can be sighted many of the monuments of misplaced currency (not confidence) that we are constantly confronted with in all parts of America.

The writer has visited several poultry farms where the business was supposed to be conducted on a large scale, and it was plain to see failure for the enterprise. There was no more chance for success than we could expect to find should some rank outsider purchase one of our large retail houses in the city and attempt to take general management of it without any previous experience in the business. No matter how great the income may be from any enterprise or how much one knows about getting trade and holding it unless there is some one in charge of the expenditures or leak end of the business failure will follow. A money getter and money saver are two different men entirely, and the successful men of today in every line of business are the ones who know where the shut-off valve is and know how to apply it.

The failures in the poultry business cannot in every instance be traced to boys or young men just starting in life, neither can we trace it to the spendthrift or reckless liver, as in instances to my knowledge some of the most miserly, close-fisted men one can meet have plunged recklessly in the poultry business and lost every dollar they possessed. They simply figure on the profits from ten hens kept in a backyard where their living comes entirely from the waste table scraps, and imagine that a farm covered with ten thousand hens would yield the same profit per hen. If they had reckoned the changed conditions that were necessary to accommodate this large flock of fowls, the enormous expense necessary to properly house them, the amount of range required to give them comfortable quarters with equal amount of range that had been accorded the other ten and had then figured their own ignorance in making the comparison as to care and management, they would have stopped before they spent very much money. But when they get a real bad case of "hen fever" they won't do this. They have the figures on their ten hens and they propose to show you that they are the boys who know just how to do it and your time is wasted in trying to turn them away from their pet scheme.

I remember an instance while connected with the incubator business. A man with a pipe dream and visions of wealth to come dropped in my office and ordered five 360-egg machines; he then ordered thoroughbred eggs to fill them; at the same time he placed an order for a hot water heating plant and about everything else that was listed in the catalogue. He had bought lumber and wire from another firm, and had all the goods shipped to a farm that did not as yet possess a hen house. I tried to give him some advice, but found he was as full of

Blue Andalusians
At Los Angeles, 1906, our strain in a class of 68 Audalusians with 16 birds won more firsts than all our competitors combined. Eggs, $1.50 and $2.00 per 14.
Blue Ridge Poultry Yards, 128 Avenue 32 Los Angeles

Single Comb White Leghorns and Indian Runner Ducks
Eggs, $1.50 per setting. $6.00 per 100. Send for illustrated catalogue.
John P. Boden, 638 Second St., Watsonville, Cal.

S.C. White Leghorns Indian Runner Ducks
Eggs, $1 per setting, or $5 per 100. Leghorns of McFarlane strain Fertility high, 80% guaranteed. ***J. E. Beadle, 901 No. St. Louis St., Los Angeles.***

SONOMA-AMERICAN INCUBATOR
Send for large circular fully describing these machines.
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Chickens and Eggs
Having handled Poultry in this market for the past thirty years, we can give you the best results and prompt returns.
D. E. Allison & Co., Inc.
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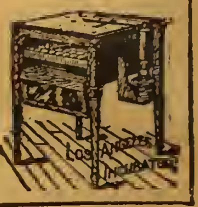
Single Comb Brown Leghorns
Exclusively
Stock for sale and eggs for hatching. Eggs from first pen $2.00 per 15 eggs, second pen $1.50 per 15. Incubator lots for $6.00 per 100 eggs. They have always won first prize whenever shown. Large birds and heavy layers.
W. E. Mercer - - Ventura, Cal.

High Grade **S. C. Rhode Island Reds White Plymouth Rocks and Buff Leghorns**
All new matings this season. Some of the breeding birds personally selected by the owner in the east last fall. Strong hardy stock, bred to lay and to win. Our Reds won at San Francisco, San Diego and Los Angeles shows. Best eggs $2 00 for 15, $5.00 for 50. From good utility matings $1.00 for 15, $3.00 for 50.
Lake Avenue Poultry Yards
757 N. Lake Avenue - Pasadena, Cal.

$1500
For the above sum, Captain Mitchell of Santa Barbara will sell his poultry business and good will. The outfit consists of 1000 Standard Bred S. C. White Leghorn laying hens and pullets and their fixtures, i. e., Brooders, Houses, Posts, 6 foot "Union Lock" Fence Wire, Etc., Etc.
Sales of eggs for hatching average 14,000 per year at $70 per 1000, and the net income per annum for the last four years has been from $1000 to $1500. For further particulars apply to
Captain Mitchell, Rural No. 1, Santa Barbara

MISSION VIEW POULTRY RANCH
WHITE WYANDOTTES
Stock For Sale, $1.50 and Up. Prize Winning Strain
MRS. C. D. HUBBARD, BOX 282, SAN FERNANDO, CAL.



SUCCESS IS ATTAINED WITH **LOS ANGELES INCUBATORS**
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HENRY ALBERS 315 S. MAIN ST. LOS AGNELES

Dean's Pacific is an Incubator built on scientific plans and has all the latest improvements. Every machine guaranteed. "Facts From Experience" and Catalog for the asking. Address ***Dean's Place, 2509 Central Avenue, Los Angeles.***

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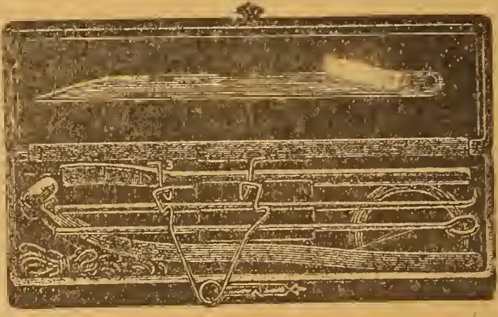
Don't believe all we say, but just enough to buy our Poultry Foods
Ask your nearest dealer for them and take no imitations
Emery's "B. B. & B."
THE PACIFIC GUANO & FERTILIZER CO. Successors to N.Ohlandt & Co San Francisco, Cal.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Complete with Instructions, $2.50, Postpaid
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West Coast Chick Feed
A perfectly balanced ration for the growing chicks. All pure food, no filler, no waste, hence cheapest. Keeps them growing and healthy. Made by
WEST COAST STOCK FOOD CO.
818 San Fernando St. (through to Alameda) Los Angeles, Cal.

SAM'L R. KELLAM, President of the L. A. Co. Poultry Association, says: "West Coast Chick Feed is the best feed for young chicks I have ever used."

MRS. A. BASLEY, the celebrated poultry authority says: "I want some more of your West Coast Chick Feed for it is excellent. It is purer, cleaner and appears better balanced than other feed I have been using, and to tell you the truth I have been experimenting feeeding both together and they always eat yours in preference."

S. M. BUTLER, Lamanda Park, the well known poultry judge and successful breeder, says: "I want to say that too much praise can't be given West Coast Chick Feed for growing Chicks."

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HYNES, CALIFORNIA
Breeders of S. C. White Leghorns Exclusively
Fine Feathers alone do not make the profitable hen. Our fowls have the reputation of being ***extra large, handsome*** and ***extra heavy layers.*** Last season, our eggs averaged over 95 per cent. fertile. ***Remember***—In getting eggs from us, you do not get them from the general runs. We have but one grade of eggs to sell for hatching and those are from our breeding pen composed of only the choicest fowls, selected from hundreds that are ***bred to lay.*** Hens that approach the ***200 egg record.***
Price of Eggs—$1.50 per 15, $5 per 100. ***Send for Illustrated Catalogue. Address,***
LEO. W. MARDEN, Manager

theories as an egg of meat, and it was just as well to argue with a religious fanatic as to try to change his plans. He had the figures and knew it would work out all right. He said in less than six months he would show Chicago what real broilers and roasters ought to look like, in fact, he was going to make a lobster out of some one (and he did) by showing how easy it is to get rich from commercial poultry. For his wife's sake I wish he had, for she was a good woman. Well, we shipped the machines, eggs and other paraphernalia. He unloaded them from the cars and we learned afterwards there arrived at the same time the lumber and wire that he was going to use for houses, fences and the like. He got the machines set up, lighted a lamp and put the eggs in them and began building a house around them. One party who visited the plant reported that at one time he saw three machines with pieces of lumber and shingles on top of them that had fallen through from the roof of the house where the carpenters were working. Two of the pieces of boards were lying on the regulating arms so the machines could not adjust themselves. By the time the hatch was due he had partially completed a brooder house. This was built on frozen ground and built of unseasoned lumber. Down near the boiler the heat thawed the ground, so there was a semblance of warmth, but the rear of the building was as cold as an iceberg. Into this house and brooder, planned after his own ideas (the only correct principle, he said) he put his young chicks. The incubators, regardless of poor attention, had hatched fairly well and there was something like one thousand young chicks crowded in these correct system brooders. Here is where trouble began. For some reason his "correct system" didn't work well. No doubt the system was all right, but the chicks were not educated to his high ideals, and rather than learn new tricks they began to shuffle off their "mortal coils." They died in two and fours and finally in hundred lots. He tried all the feeds he had read about and added a few of his own. A young mother with a "colicky" child could not have done more, but still they died. He knew his ideas were correct, for he had figured them out on paper, and figures, you know, won't lie. (The man who first made this statement has not yet tackled the hen business on a big scale.) This went on for about a week; finally he came to the city, called me to my private office, pulled a chair close to me and said, "Brother, I need a little advice." I talked over the situation with him. Finally I sent a man out to see what could be done. He came back and I asked for his report. "Well," he says, "it is a fine plant up there; he has built three large poultry houses, used up two car loads of cedar posts and one car load of Page woven wire fence; his yards are nicely arranged and his men have painted the buildings. It's a nice plant all right, all right." "But how about the chicks?" "Oh, I used a wheelbarrow for a hearse and took the chicks out and buried them; turned out the lamps to save cost of oil." "But how about our man?" "Oh, he moved." "Where is he?" I asked. "I think he is out on the South Side taking in boarders."

This same plant slightly altered and under different management is running today and making money, but the man who owns it began in a small way, learned the leaks as he went along and can today show a bank account. He knew how to make poultry pay.—By the editor of The Inland Poultry Journal.

THE POULTRY YARD

A flock of ten hens can be comfortably kept in a yard twenty feet wide by fifty feet deep. An acre of ground will contain forty such yards, or four hundred hens. No cocks are necessary, unless the eggs are desired for incubation. To estimate $1.50 as a clear profit for each hen, is not the maximum limit, but the profit accrues according to the management given. Poultry thrive best when running at large, but this applies only to small flocks. Hens kept by the hundred become too crowded while at large, no matter how wide the range, and sickness and loss occur. Large flocks must be divided, and the size of the yard required for the flock is of but little importance compared with the management.

There is much profit to be derived from the sale of young chicks—and where one pays attention to the business—they receive the greatest care. Each brood, like the adult, is kept separate from the others in a little coop, which prevents quarreling among the hens, and enables the manager to count and know all about the chicks. This is very important, as there are many farmers who hatch scores of broods and yet cannot tell what becomes of two-thirds of them. Hawks, crows, cats, rats and other depredators take their choice and the owners are no wiser. Each setting hen should be in a coop by herself and each coop should have a lath run. —Ex.

WHAT IS A REASONABLE ESTIMATE?

Assuming, says the Produce Weekly, that San Francisco holds one-fourth of our population, that its people use two million dollars' worth of eggs during the year, and allowing for a smaller use of eggs throughout the country than in the city, probably $7,500,000 would be a reasonable valuation of the egg production of California. This is conservative figuring, and if we consider that in the County of Sonoma the shipments of eggs to this market aggregate fully $1,000,000 in value, the remaining 55 counties will produce enough to confirm this estimate. It would not be extravagant to claim ten million dollars as the value of all the eggs shipped to market and consumed on the farms and in the homes where poultry is an adjunct.

A man may owe something to himself, but the chances are he owes more to other people.

Blue Andalusian Eggs
$1.50 and $2.00 for 15, $7.00 per 100. Free range. I raised and sold cockerel winning first prize at late L. A. poultry show. Stock. ***Mrs. J. S. Duff, 3145 S. Hoover St., Los Angeles, Cal.***

BRONZE TURKEYS
Hart's strain. Winners of five firsts at Los Angeles Show, '06, and always winners wherever exhibited. Write for prices.
Ed. Hart. Clements, Cal.

SHADE'S Rhode Island . . . Red Farm
Automatic Chicken Feeders.
Shade's Egg Food sold to consumers only.
San Bernardino, - - California.

EGGS FOR HATCHING
from a heavy-laying strain of
SINGLE COMB WHITE LEGHORNS
I guarantee 100% fertile. Write for prices.
Golden State Poultry Yards, Lordsburg, Cal.
T. E. Mills, Prop. Home Phone 1720

Standard and Line-Bred Barred Plymouth Rocks Exclusively
Ocean, Blue, Thompson Ringlet and Arrowhead strains. Eggs for hatching, chicks for sale. Winners at the 1906 Los Angeles Show.
S B. WOLFE, 1549½ W. 16 St., Los Angeles. Phone West 4901

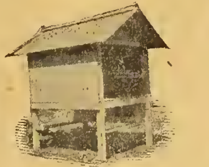
Buff Orpington and Barred Rock Eggs
for hatching from pure bred stock at $1.00 per 14.
Mrs. Albert Miller.
Tel. East 1767. Station A, Los Angeles, Cal.

White Wyandottes.
High scoring stay white birds. 1st Cock L-A. 1906 show and other winners. Eggs $1.50 to $3. per 13. $10.00 per 100. Mount Holly Poultry Yards, Hollywood, Cal. E. W. Preston, Prop., Sunset, Hollywood, 901.

White and Buff Wyandottes
Prize-Winning, Egg-Laying, Wealth-Producing Strain.
M. E. DILLINGHAM, Bx67 San Gabriel, Cal.

THOROUGHBRED YOUNG CHICKS
White Leghorns, 10c.
White Ply. Rocks, 12½c.
C. L. GREEN, Manager, ANAHEIM, CAL.

THE FEATHERLEY FARM ORPINGTONS
Over 30 prizes, specials and cups in **Buff, Black and White Orpingtons** on 27 entries this year at San Francisco, San Diego and Los Angeles. Bred for utility and egg purposes, as well as prize winning qualities. Eggs from $2 to $3 a setting. Write for free mating list, describing my ten prize yards.
P. L. Harley, Box C, Redlands, Cal.



PORTABLE BUILDINGS
Made in all sizes and for all purposes. We show here the Oliver Portable Poultry House, 4 feet wide, 5 feet long, 3 foot wall. **Send for Catalogue,** which gives photographs, Prices and weights of other buildings
BURNHAM-STANDEFORD CO.
522 First Street Oakland, Cal.

Protect The Hens
To Raise Fine Birds
You must first of all provide comfortable quarters.
Profitable Egg Getting... success in poultry business demands it. It is not necessary to invest a fortune in your poultry house. It is not necessary to build a heavy expensive poultry house.
Use for the Roof and Sides the genuine
Pioneer
Rubber Sanded Roofing
Makes a Light Structure—solid, strong and absolutely weather-proof. That wear-proof surface of hard flint sand means years and years of extra wear without additional cost. Send for samples and prices.
Our complete Roofing Guide "D" will tell you about every class of Roofing and Building Paper for every purpose. Send for it to-day.
PIONEER ROLL PAPER CO.
Los Angeles, California.

"Nothing Just as Good"

"Nothing Just as Good"

Chamberlain's Perfect Chick Feed
World's Chick Feed of To-Day. The only original **Dry Chick Feed.** All others are worthless imitations. **Chamberlain's Perfect Chick Feed** was used exclusively at the great St. Louis World's Fair during the 7 months. This the highest compliment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.
CHAMBERLAIN'S PERFECT MASH EGG FEED,
THE WORLD'S GREATEST EGG PRODUCER.
GERMAIN SEED CO.,
Pacific Coast Agents. LOS ANGELES, CALA,
SPECIAL PRICES ON TON LOTS.
Distributing Agents: FREDERICK BROWN, San Jose; CHAS. H. NEARPASS, San Diego; CHANNEL COMMERCIAL CO., Santa Barbara and Ventura.

General Agriculture

THOROUGH TILLAGE.

The Colorado Experimental Station has issued a bulletin in which the methods of plowing, harrowing, subsurface packing, and summer fallowing in connection with dry farming are described; the importance of seed selection for semi-arid conditions pointed out; and directions for the culture of different crops on semi-arid lands are given. The annual rainfall in Colorado is recorded and the experience in dry farming in other States is noted.

In a limited co-operative experiment a field with a light seeding of wheat had as good a stand as a field seeded at nearly twice the rate, due to the difference in the size of the kernels. The rate of seeding different grain and forage crops in dry farming is given in a table.

Of the spring wheat varieties Kubanka durum has appeared best adapted to the dry land areas of Colorado, and among the winter wheats Turkey Red has given the most satisfactory yields. Bromus inermis has proved to be the best of drought-resistant grasses brought into the State. Agropyrum occidentale is considered one of the hardiest and best native hay grasses.

It is stated that when the straw necessary to produce a bushel of wheat is estimated at 90 pounds the water required in Colorado to produce one bushel of grain amounts to 56.25 tons. It is pointed out that more moisture is required to mature crops under semi-arid than under humid conditions. Ranking from lowest to highest in the amount of water required for maturity, the common field crops are given in the following order: Corn, potatoes, wheat, barley, field peas, oats, alfalfa, and red clover.

RECLAMATION ACT HOMESTEAD ENTRIES.

The Director of the Geological Survey recently requested an opinion from the Department of the Interior as to whether a homesteader whose entry is within the irrigable area of an irrigation project, but not subject to the restrictions, limitations, and conditions of the reclamation act, may sell a relinquishment of part of his entry.

The Assistant Attorney-General has rendered an opinion which is approved by the Secretary of the Interior, that an entryman who has not acquired title to his lands may not convey or agree to convey to a water users' association one or more legal subdivisions of his entry, to be held in trust by such association and sold for the benefit of the homesteader to persons competent to enter such lands, under the same form and in the same manner now provided for the conveyance and sale of lands in private ownership lying within the limits of an irrigable area.

The opinion recites that one of the indispensable conditions of the homestead law is that the entry must be made for the exclusive use and benefit of the applicant and not "either directly or indirectly for the use of any other person." In submitting final proof, the entryman is required to make oath that "no part of such land has been alienated, except as provided in section 2288," which provides for alienation for church and cemetery purposes. Under such prohibition, "a contract by a homesteader to convey a portion of the tract when he shall acquire title from the United States is against public policy and void."

Until the homesteader has acquired either a legal or equitable title to the land, he cannot make an agreement to convey any portion of it that will secure to another any right or interest therein. He may relinquish all or parts of it, but the relinquishment must be to the United States and the land relinquished becomes public land subject to entry by the first legal applicant. If the land relinquished is within the irrigable area of a reclamation project, it becomes subject to the provisions of the reclamation act.

UNDERGROUND COAST WATER.

"The Development of Underground Waters in the Western Coastal Plain Region of Southern California" is the title of a report prepared by Walter C. Mendenhall of the United States Geological Survey and published as Water-Supply and Irrigation Paper No. 139. This paper is similar to two published on the eastern and central portions of the coastal plain of Southern California. These papers contain a list of nearly all the wells in this section of the State, and such data as to water levels, irrigation systems, and irrigated lands as could be collected by a careful canvass. In addition each paper contains a brief discussion of the conditions affecting the underground waters in the particular section of which it treats.

The westernmost section of the coastal plain of Southern California includes the Redondo quadrangle and the south half of the Santa Monica quadrangle. The more important data in this paper is presented in the form of tables and maps; the tables giving the essential facts regarding each well examined, the maps showing graphically the irrigated areas, the altitude of the water plane, the extent and position of the past and present artesian areas, and the zones of relative purity of the ground waters.

In this area, which includes the greatest body of water bearing land, the largest artesian basin and the most extensive diversified farming district of the southern part of the State, the development of underground waters for domestic purposes and irrigation has been under way for 25 years, but has been especially marked during the last decade.

The eastern and central sections of the coastal plain, which have been discussed in Water-Supply papers Nos. 137 and 138, include the greater part of the coastal plain artesian belt and the lower courses of Los Angeles, San Gabriel and Santa Ana rivers. The western section, described in the present paper, is crossed by none of the larger streams of the valley, and includes only the northwestern narrower part of the artesian area. It therefore contains a somewhat larger proportion of dry lands than the central and eastern areas. Its drainage system generally is ill defined, the valley of Ballona Creek being the only clearly marked drainageway in it. Along the coast lies a belt of sand dunes, some of which, in the section north of San Pedro Hill, are two miles inland, although these inner dunes are now active. South of Gardena is a depressed area without a surface outlet, which has contained a lake two or three miles long during exceptionally wet years. Other smaller pits are distributed along the old sand dunes belt back of the stretch of coast extending from Playa del Rey to Redondo.

Capt. Mitchell of Santa Barbara is advertising his poultry business for sale; for further particulars write him as per his advertisement in the Cultivator.

AUCTION

40 Cows and Heifers, 1 Bull, 6 Horses

On Kent Tract, One-Fourth Mile South of
GRAHAM STATION
On Long Beach Electric Line, One Mile North of Watts. Take Long Beach car to Graham Station

AT 10 A. M., TUESDAY, MAY 15TH.

35 Head First Class Milk Cows, Jerseys, Holsteins and Durhams. Large milkers and test high. Many fresh, balance coming in soon. Young and in good condition. All good dairy and family cows.

5 Head Heifers, one and two years old.

Team Black Mares, weight 1400 lbs. each, 8 years old.

Team Bay Geldings, weight 1300 lbs. each, 8 years old.

Bay Mare, weight 1400 lbs., heavy with foal.

Bay Yearling Colt.

2 Two-Seated Spring Wagons, 1 Two-Seated Surrey, 1 New Mitchell 2¼ Wagon, 1 Set Double Driving Harness, 2 Sets Single Harness, 1 Deering Mower, Rake, 1 Road Cart, all farming utensils, etc.

On account of ranch being sub-divided I am quitting the dairy business, and will absolutely sell everything to the highest bidder without reserve.

TERMS—12 months time will be given with note and approved security. Liberal discount for cash. Free lunch at noon.

KENT BROS., Owners
RHOADES, REED & RHOADES, Aucrs.
Office, 730 South Spring St., Los Angeles

San Francisco will not be rebuilt in a day, but it will be a more beautiful city in five years than it has ever been.

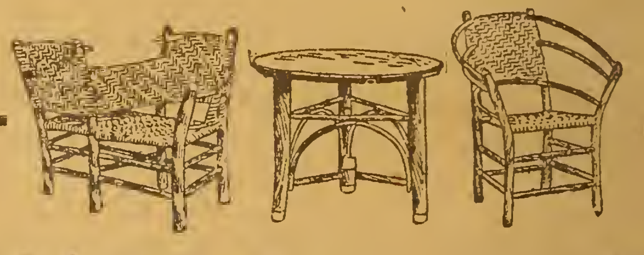
SURE SEAL

Home canning of vegetables, meat and fruit made easy and certain by The Economy Jar

To give you an idea how easy it is to can fruits, soups, vegetables, meats, etc., in the Economy way—Note the wide mouth—how easy it is to put your hand in and thoroughly clean the jar. No rough seams inside or out to catch lint, chip into food or scratch you. After pouring the contents in hot and wiping rim of jar, clap on the gold-lacquered cap (acid-proof.) No screwing, twisting or prying. Just press the cap on gently. No bruises, burns, cuts or sprains when you use the Economy. Put clamp on top to hold cap in position while contents are cooling. The cooling forms a vacuum and holds cap on firmly. Jar is then absolutely airtight. Next day remove clamp, which lifts off lightly. If the food was cooked enough cap is held tight by vacuum, and contents cannot spoil, as no air can leak in. If cap loosens, contents were not cooked enough to sterilize, and can be heated again and saved. The Economy automatically informs you if contents are in proper condition to put away. When ready to use, puncture cap with can opener and pry off lightly. No sprained wrists, no unscrewing, no hands gashed by broken glass. No glass particles in food; no smelly top; contents fresh and sweet as the day you put them up. No separate rubber rings required. The Economy is the jar you will use with comfort and satisfaction year after year. There is absolutely no jar that looks like, works like, keeps like, seals like, or opens like the Economy. Using some other jar *cannot* give you any notion of what the Economy really is and what it really will do. Try the Economy for yourself. Ask your dealer for it. Send his name and we will send you, free, a booklet of recipes. Write direct to main office.

CAPS
20c
dozen

Kerr Glass Manufacturing Co.
145 North Fourth St., Portland, Oregon
Branch Office, Department 1, Philadelphia, Pa.



GENUINE OLD HICKORY
FOR SUMMER COMFORT ON THE PORCH OR LAWN

The warm weather of the summer months will soon be with us and we will all improve every opportunity to adjourn to a shaded porch or lawn to enjoy the summer breezes and the comforts of an easy chair or rocker.
The old Hickory furniture is the most suitable for out-of-door use. It is strong, durable and comfortable. We are now showing a large line of exceptionally well made pieces of the genuine old hickory, which we would like you to see.

Niles Pease Furniture Company
439-441-443 S. Spring St., Los Angeles, Cal.

Canvas Goods
Largest Manufacturers on the Pacific Coast

Tents
We manufacture everything from a prospector's tent to a circus top. Tents for lemon curing, fumigating, camping and living.

Awnings
For business blocks and for home use. Handsome stripes to match.

Khaki Suits
Made to measure for men and women.

Irrigating Hose
Heavy Canvas, 1¾ to 13 inches.

Mail Orders Solicited. For catalogues, address Department 5.

THE WM. H. HOEGEE CO.
INCORPORATED
138-140-142 So. Main St., Los Angeles
Exchanges 87

Queries and Replies

BERMUDA GRASS

I have noticed several inquiries in the Cultivator where Bermuda grass seed can be obtained. I presume these enquirers think it a desirable grass for California. For their information I will state that on the 27th of this month (April) at a meeting of the Board of Horticulture at Santa Ana it was decided to start a special campaign against Russian thistle, Johnson and Bermuda grass which are increasing rapidly in the county. The commissioners feel that the time has arrived when they must make a strenuous effort at least to retard their spread or the county will be overrun with them. I lived in Buena Park, Orange County, about 18 years, two of its citizens brought in a few roots of Bermuda grass and planted them on the banks of their reservoirs. The birds carried the seed from these small beginnings so that now it is covering the whole county and doing untold damage. The grass is of very little account as a forage grass, it gets into the alfalfa and runs it out. I had 15 acres which it spoiled. There was about one acre which was clear Bermuda grasss which when cut was worthless for hay, being like chaff or feathers, no weight to it. Adjoining the alfalfa I had an orchard, the birds carried the seed near the trees where the cultivator could not reach the Bermuda roots necessitating hoeing by hand which would have to be repeated every week. If I had to be afflicted with a square rod of Canadian thistles or Bermuda grass I would choose the thistles. Bermuda grass has damaged Orange county a great many thousand dollars. I feel it a duty to warn people against it.—A. W., Los Angeles.

SEED GROWING IN THE SANTA CLARA VALLEY.

A writer in the San Jose Mercury says: "More than three-fifths of all the vegetable and flower seeds grown in the world are produced in Santa Clara Valley, California. The average annual crop of onion seed is 400 tons, or 800,000 pounds. Nearly 10,000 acres of land are under cultivation in that county for the growing of flower and garden seeds. The total crop amounts to something like 3,000,000 pounds annually, entailing a business of over a million dollars. There are grown regularly for commercial trade in California 411 varieties of sweet peas, 72 of lettuce, 33 of onion, 32 of radish, 25 of beans, 30 of asters, and 53 of nasturtiums, not to mention hundreds of other seeds less widely known.

In 1874 Santa Clara County's seed industry was limited to a small experimental bed. Near Gilroy there is a field of 640 acres, a mile square, containing nothing but seed onions. On the other side of the road there is a collection of sweet pea fields ranging in size from 100 to 300 acres each. Eight hundred thousand pounds of onion seed, 750,000 pounds of sweet pea seeds and ten or twenty car loads of mustard seed are some of the interesting items on the shipping list of the Santa Clara seed growers.

It was a man by the name of Haywards, from Rochester, N. Y., who was the father of seed growing in California. He experimented in 1874 in his back yard with onions and sweet peas. The result was so favorable that the following year R. W. Wilson also from Rochester, set out some 20 or 30 acres in onion, lettuce, beet and carrot. The annual output 15 years ago was about 10,000 pounds, but it has since grown to the astounding proportions already stated and the industry is now giving employment to over 1500 men.

Though much of the labor in seed-growing must be performed by skilled workmen, yet there is a vast proportion that can and is done by Chinese and Japanese labor. In the cultivation of plants; each coolie is given a number of rows. All start out at sunrise from their rookeries and work down the rows—80, 100 and at times 200 Celestials in a long line. They seem never to tire at their work, but keep steadily at it throughout the day. They carry their queer wicker bottles of gin with them to the fields.

In the seed-growing district of Santa Clara County, which extends from Palo Alto in the north to Gilroy in the south, there are to be found hundreds of acres of sweet peas. The annual output is between 350 and 400 tons. This is not all, for many more ranches are used exclusively in the growing of sweet peas for the floral markets of the Pacific Coast.

Of the many hundred varieties of flower seeds, asters pay the best. Next to sweet peas, they are the most extensively grown in the Santa Clara Valley, the average annual crop being about 50,000 pounds.

The California climate is not unlike that of Southern France and Germany, where the old world seed-growers have their grounds. In spite of the similarity, however, California seed-growers succeed in harvesting their crops from three to five months earlier than do their foreign competitors.

SAMSON ENGINES AND PUMPS

Some time ago the Cultivator referred, in an extended article, to the economical working, for farmer's purposes, of the Samson Engines, both gasoline and crude oil. This company has continued to enlarge their works since then and is today better than ever fitted for turning out power for most advantageous use on the farm, also water lifting machinery. Their favorite pump, which they are today manufacturing, is the Samson Centrifugal. The Centrifugal is regarded as the cheapest possible means of raising water where conditions are favorable. Regarding these centrifugals which have some of the latest modern improvements, the Samson people will be glad to send printed inforamtion showing the features which they contain that make them of more practicable value than other pumps. The Samson people claim these pumps will furnish more water per horse power than any other pump made.

Write direct to Samson Iron Works, Stockton, or see their representative at 233 Los Angeles St., Los Angeles, or 491 J. St., Fresno.

The engines are not only manufactured for pumping purposes but the company is putting out many engines of the marine type which have proved satisfactory. Of more interest to farmers, however, are the pumping engines, wood-sawing outfits which consist of the engine and all mounted on trucks, and also a small utility outfit for pumping or general light power about the ranch.

A FINE THERMOMETER FOR THE ASKING.

The O. J. Weber Co., is complimenting its friends and patrons by giving out a fine thermometer which will register anywhere from 70 degrees below zero to 120 above. We do not know whether California has the capacity of reaching the lower notch but sure it is that some favored localities are able to make the higher figure all right. In any case Weber has the thermometer to try it on, and creamery and dairy people will do well to happen in and get acquainted with Mr. Weber and, incidentally mention that the Cultivator says the thermometers are theirs for the asking. While there we presume everybody will take the chance of looking at Mr. Weber's stock of dairy and creamery supplies which now fill two large store rooms.

The Haynes Gasoline Engine, manufactured by Molby Haynes, 248 N. Hunter street, Stockton, Cal., which is being advertised in the Cultivator, is one of the simplest and best machines on the market. It is claimed for this machine that it does not require an experienced engineer to run it. Mr. Haynes manufactures all kinds of special machinery, installs complete irrigation plants, and his prices are as low as first class machinery can be sold. Write him for catalogue and estimates on any kind of work.

The Williams Farm Telephone and Supply Company advertising farm telephones, have issued a fine booklet giving full information as to cost of putting in rural telephones. Write them either at Cleveland, Ohio, or Oakland, California.

RENOVATING SOILS

Continued from first page.

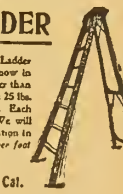
plants become very rich in nitrogenous compounds, and when they decay in the soil they set free large amounts of nitrates for the use of any crop which may be growing at the time.

The cultivation of leguminous crops is one of the most important and economical means of maintaining a supply of nitrogenous plant food in the soil. Nitrates may, of course, be supplied in commercial fertilizers; but fertilizers containing nitrogen are very expensive, and it usually pays better to supply nitrogen by growing legumes or by the application of stable manure, which is rich in nitrogen when properly handled. In good farm practice both stable manure and leguminous crops are used as sources of nitrogen.

IT'S PENNY WISE
Policy to set out a good tree, costing good money and then let the sun burn the bark, or the rabbits gnaw it when for $1.00 an acre you can get Yucca Tree Protectors that are practically indestructible. Write for free sample of the wrap. Yucca Mfg. Co., 2124 Willow St., Los Angeles.

RANCH PROPERTIES We make a specialty of handling country property. Do you wish to buy, sell or exchange? Write us. ***White & Newby, 404 H. W. Hellman Building, Los Angeles, Cal.***

Bee Keepers' Supplies
Cases and Cans and Comb Honey Shipping Cases. Best Goods, Lowest Prices
H. J. Mercer
731 E. Third St. Los Angeles, Cal.



THE BOSS LADDER
We have been making the Boss Fruit Ladder since 1895, and thousands of them are now in use. They are lighter, stronger and stiffer than any other make. A 10-ft. ladder weighs 25 lbs. so that girls and boys can handle them. Each step is braced with four wire braces. We will ship one or more to any S. P. R. R. Station in California, on receipt of price—*30 cents per foot and prepay the freight.*
Driver, Aber & Co., San Leandro, Cal.

Apple Trees 5 to 7 feet, one year old, $20 per 100. Grown in Riverside. Clean and healthy. ***Cornichon Grape Vines,*** $25.00 per 1000.
Jurupa Nurseries, Riverside, Cal.

The Haynes Gasoline Engine
Simplicity is its feature. You do not need to be an experienced engineer to operate the Haynes. My prices are the lowest for a first-class engine. Guaranteed.
I install Irrigation Plants complete. Send for Catalogue and Estimates.
Molbry Haynes
246 N. Hunter St. - Stockton, Cal.

FOR CLEANSING MILK CANS, BOTTLES, AND ALL DAIRY UTENSILS
AS WELL AS ANYTHING IN THE KITCHEN OR LAUNDRY **20 MULE TEAM BORAX**
Is Unsurpassed. Sold by all dealers in packages. ☞ Send for Free Sample.
PACIFIC COAST BORAX CO., 114 Sansome St., San Francisco, Cal.

Household Department

YOU AND I.

If we could leave this world behind—
Its gains and loss, its praise and blame,
Nor seeking place, nor fearing shame,
Some fair land quite forgotten find,
We might be happy, you and I,
And let this foolish world go by.

No paradise of love and bliss,
No dreams of youth in Eden bowers,
But some dear home of quiet hours,
Where all of life we should not miss,
But find some day sweet ere we die,
And let this cruel world go by.

It will not be—we are too weak
To snatch from Time and Life one day;
But, when they both have passed away,
O Love, we will each other seek
Where none can part us, none deny
This world and all its woes gone by.
—Selected.

"The Babes in the Woods."

"I don't know, pa. I just dread to see them go away so far all alone they're nothing but just babes in the woods, and don't know a thing how to take care of themselves.

Thus, mamma, looking wistfully at Harry and me, the day after our return from our little bridal trip, and at the same time the day before our intended departure for our new home.

Papa lowered his book—papa was reading, in fact he was always reading if there was a spare moment to be had, but he always put his book aside quickly when called on—and with his forefinger for a book-mark, he tilted his head so that he could look over his glasses and after what seemed to me an age of consideration, said, "Oh, I would'nt worry, mother, I think they will manage to get along, they seem to be pretty lively 'babes.'

I just could have kissed pa for that encouraging remark, because, to tell the truth, I was quaking all through. Harry was only twenty-one and I was a year younger. I graduated at seventeen and taught school some, since, taught music a little, painted a little, and—now I know you will laugh, I had written verses a little, and this it was that had made our acquaintance, Harry's and mine, because he was a—I called it a "journalist," and thought it fine, but he always said simply, that he was a newspaper man. How we do magnify these little positions when they are new to us,. and how matter of fact they become to us later on.

I was awfully conscious, when mamma spoke, of all my lacks, and was more than a little nervous over them, but I turned off as bravely as I could by saying, "I hope we won't get lost, for it will take such a lot of leaves to cover Harry."

Mamma wiped her eyes, but she smiled as she glanced up into Harry's serious face. He, you see, is six feet tall, and I am five feet three, but mamma, chubby little mamma, is only five feet one.

"I'll hope for the best,'" mamma said, but not very hopefully it seemed to me.

Never mind about the tearful "good-bys," for I have learned, already that one should never refer to unhappy things. And I've learned, too, that it is not wise to talk of one's self, but just this once I'll have to in order to explain.

We took a flat when we got here, just the sweetest little mite of a nest, of four tiny rooms, with gas range, and steam heat, just as nice as could be.

While we were settling, we took our meals at a restaurant. We finished everything up late on Saturday, and then Harry said we had better go out and market, he thought for Sunday. So we went. He told me that his land lady bought her groceries at a department store, and away we went. It was such fun going.

"Now, let's see, what do we have to have, dear?" he asked.

That puzzled me a little, but I tried hard to think. "Let's see, you like olives, let's get them," I said.

We priced a big, lovely looking bottle. I had never thought that olives had a price before. I said I guessed I didn't want any, come to think. You see, I had a somewhat exaggerated idea of our poverty, and was determined to "live inside our income."

"We want flour," I announced, for I remembered the home flour barrel. We bought a big sack—and they told us it would be delivered the first of next week.

"We must have some meat," Harry announced next.

We had grown cautious by this time, so in the next market department we meekly asked the price of steak. "Twenty-two cents for that little bit?" I gasped, "why that—that—come on over here and let's look at fish."

Great big damp looking fish, and they would not deliver one before next week. But at the far end I spied some dear little dried businesses, they lay right near the "bloaters," and if they had a name I have forgotten it, but they were marked "3 cents each."

"Let's get some" I whispered, and I bravely ordered three.

We got them, all rolled up, and I took them, but—now we were almost famished, and I aver that those almost salty, brown things smelled delicious, but what would my gloves be like—and I looked at Harry and Harry looked at me.

"Here," he said, and taking them, slipped the package into his overcoat pocket. (Let me finish the story, it took a week of airing and quantities of benzine and cologne water to make that coat endurable.)

Over among the canned goods Harry saw something marked "corned beef" and bought a whole can. "I like corned beef and cabbage," he whispered, for we were both getting a little shy of airing our ignorance in outspoken words. Then we wandered till we found a cabbage and bought that.

A few other purchases and we started for home. At the corner I saw a fruit stand. Noticed the remarkably low prices of some of the fruit and suggested we get a little.

A whole dozen bananas for ten cents and great, fat, luscious looking purple plums at ten cents a dozen. We got a dozen each.

A step further on we encountered a newsboy, and Harry invested in an evening paper at one penny.

My shopping bag was full, so were our arms, and Harry's pockets and the bag of fruit was sorely in the way of his reading that paper.

The paper bag began to split, one delicious plum peeped out and I caught it, oh, but it was good. "Look out for that bag," I cried, and Harry deep in the latest news, gave a little jerk to take extra care of the bag when—pop—rip—and down went every plum and about half of the bananas.

He was a little dago, that first newsboy, but oh, how he multiplied. And he was of all nations before a wink of time, dodging, darting, skurrying as though he expected a blow at every turn. "Why, yes, pick them up, little shavers," Harry said, and they lit all about us like a flock of famished sparrows.

"And, oh, dearie, you did not get a taste of one," I wailed, as Harry clutched the last of the torn bag and we rushed for a car.

For the first Sunday breakfast we had delicious coffee—I knew how to make that—and out somewhere, Harry had found a loaf of bread and some rolls, and with these we had—fish. I cooked two. I have since thought that such fish ought to be soaked over night. We ate only one between us, and we were over an hour at breakfast. I never saw so many bones. Harry said he never did, before.

For dinner I put the cabbage in a kettle, I was sorry but I had to cut it some, for the kettle was small and the cabbage was not, then Harry twisted the little strip of tin off the can, and we dropped the corned beef in.

I don't know what ailed that corned beef, it did not stay in a nice big piece as mama's always did, it all boiled to pieces.

Harry said the kind they had at the boarding house never acted that way. I had to strain it out, and we ate it with a spoon. We could not eat it any other way.

I fairly wailed, but Harry said "Never mind, never mind, little one, the dinner is fine, though I know you would not fish for a compliment, not when you consider the price of—."

I could not let him have it all his way, so I chipped in with "Three cents apiece, and one is enough for a dinner for two."

"I'll call it quits, if you won't mention the banana sack," he said hurriedly.

Then after a moment of thought, "The little dagoes are always there under the elevated, and I think they will hope every time I heave in sight, that another overloaded paper bag may pop and discharge its insides."

"Harry," I said, "let's go some day and see the Newsboys' Home."

"Agreed," he said, and before I write you again we will have made the visit, and I will talk to you of something more interesting than ourselves."

"You mortified me to death," complained Mrs. Richley.

"How?" demanded her sick husband.

"Why did you tell that new doctor you were in the habit of eating corned beef and cabbage? We never have such common food as that."

"Well, I want him to fix his charges on a corned beef and cabbage basis."—Catholic Standard and Times.

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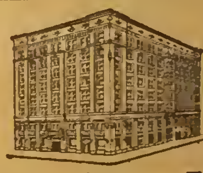

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Santa Fe

COLONIST RATES
TO CALIFORNIA

Will be in effect every day, Feb. 15 to April 7, and Sept. 15 to Oct. 31, 1906, from all points in the east and south.

Following are a few:

Chicago .... $33.00 Kansas City & Leavenworth $25.00
St. Louis .... 30.00 St. Joseph & Atchison 25.00
Galveston .... 26.45 Council Bluffs & Omaha 25.00
Dallas, Houston and Fort Worth 25.00
Nearly all points in Kansas, Oklahoma and Indian Territory ... 25.00

Colonist rates are also in effect from all points east of Chicago and south of the Ohio river.

Santa Fe Agents in California will take deposits of money to cover price of tickets, which will be promptly furnished to passengers at any point from which these rates are in effect.

California illustrated literature mailed free to any address or may be had from Santa Fe representatives.

Tourist Sleeping Car Lines

Colonist tickets are honored in tourist sleeping cars which run via the Santa Fe to Los Angeles and San Francisco.

HOUSE CLEANING HELPS

Most women dread house cleaning, but if it is properly planned and managed it is not a very difficult or disagreeable task, and when it is done, and we are rid of the dirt and dust that accumulate during the winter, we feel that the compensation is great enough to amply repay for the work. Many little things may be done before the regular work of house cleaning begins that will help along wonderfully. If new carpets are purchased for any of the rooms, they can be cut and bound and the widths sewed together, worn cane chair bottoms may be replaced by new ones, upholstered furniture recovered and lace curtains laundered. But do not become so enthusiastic over it that you will continue the work before the weather is warm enough. It is seldom safe to take down the heating stoves until the first of May when there are children in the family, for the damp, chilly spring weather often causes severe attacks of croup and pneumonia.

Get everything ready before you begin. There should be plenty of clean cloths for washing windows and woodwork, scouring soap, borax, tack hammer and puller, carpet sweeper, brushes of various kinds, mops, etc. Provide an extra supply of eatables that are good for cold lunches, or nice warmed over, such as baked beans and brown bread, roast chicken, boiled ham, rolls, fruit cake, cookies, doughnuts, and other things that the family like. With this help the meals may be quickly and easily prepared. Disturb only one room at a time, for while this may take a little longer, the comfort of the family should be considered, and there is little pleasure to them in having every room in the house in confusion and disorder. The attic and closets may be cleaned first, sorting the winter clothes and blankets, and putting the good ones away for the summer, with plenty of camphor gum or moth balls to keep them from the ravages of the moths. Wash the floors and clean the walls of the closets before anything is put back. Sweep the carpets thoroughly before taking them up, hang them on a strong line, and beat well, then remove the paper under the carpet, sprinkle the floor liberally with damp earth and the sweeping can be done without raising a cloud of dust.—Homestead.

PREVENTION OF MOTHS IN FURS AND WOOLENS.

The moth insect begins to fly freely about the house as soon as warm weather begins, usually the latter part of March for Rochester, N. Y. After this date it is not safe to have woolen clothing or furs hanging about where the moths can get at them. The moth fly lays its eggs in the furs or woolen garments, which hatch into little maggots which feed upon the wool or fur, or the hide itself, thus ruining it in a short time.

Remedy: Take ordinary tarred paper fresh from the roll and cut it in such shape that it will cover the under part and upper part of the garment when properly folded into a box. Place the fur or the woolen garment inside this fold of tarred paper then place in a tight paper box with a tight fitting cover. Or better, place it in a tightly sewed bag and tie the open end of the bag so tight that no insect can enter. If a tight paper box is used after the cover is put on, paper should be pasted over the crack or jamb in such a way as to make it impossible for the smallest insect to get into the box.

At the fur stores you can have your garments taken care of by paying from $1.00 to $5.00 each for the summer season, but this is expensive. At the fur stores they examine the garments each month and if they see the slightest indication of moths working they apply suitable remedies, whipping the garments lightly and exposing them to the sunshine for a brief time only.

Garments worn once in two to four weeks are seldom attacked by moths for some reason. If you have valuable furs to take care of it is best to examine them at least once a month. Dyed furs like sealskins, moths do not attack. Furs of natural colors such as mink, the moths will attack freely.—Green's Friut Grower.

WASHING CURTAINS.

Muslin, lawn and dimity curtains may be washed in soap and water. The work seems to be more satisfactory when done in that way. When taken down the curtains should be thoroughly shaken and then put in cold or lukewarm water and allowed to soak for some time. They should then be put into a suds and pressed and squeezed until clean; after this they should be put into a sack, boiled, sudsed, rinsed and dipped in a slightly blued water and starched in a weak starch water. The stiffness of the starch depends largely on the character of the material. If possible use the rice starch because it is finer and does not give the papery results that either corn or wheat starch does. Hang on a line and do not let them whip, because much of the stiffness will be lost and the curtain is apt to become frayed at the corners. Real lace curtains are washed in the same way and may be pinned onto sheets on the floor or stretched on stretchers made for the purpose. Ecru may be rinsed in water which has been made brown by the addition of a little strong coffee.

PROPER FOOD AND FEEDING

The amount of advice we have had concerning what to eat and what not to eat, would fill a book. If we eat bolted flour we may expect dyspepsia; if we eat meal look out for lithemia; in pork trichiniasis may be in hiding, and in richest milk the feverish bacilli is doubtless sporting.

And there is much in what we eat, much that concerns our health and strength, but there is much in the way we eat it. It is well to look out for germs, but the most virulent can not stand a bath in good, healthy gastric juice. It is necessary that germs come, one way or another, but let it be woe unto them when they strike the gastric membrane.

Children nowadays are trained to do most everything that is useless and expensive, let us train them to chew, to eat and drink slowly.

A glass of milk swallowed at a gulp is a revert to the way of the ostrich, and to invite indigestion and feed bacteria, but to sip it, slowly and leisurely is to make the warm, rich blood and the strong, throbbing heart.

Slow eaters are small eaters, because hunger is appeasd physiologically through the nervous system. Lots of people never eat, properly speaking, they simply fill up. The delicate nerves of the stomach, which would tell us of hunger appeased, are overwhelmed and stunned by the deluge of drink and the rain of half-masticated food. So they lie silent, and the nerves of ordinary sensation give the signal when we begin to crowd our diaphragm up about the collar bone, and we stop, not because we have enough, but because we are loaded and another mouthful might explode us.

It has been shown experimentally that it is very hard to infect a healthy animal by way of the alimentary tract, though it be fed upon the most virulent of the pathogenic germs.

It is next to impossible to avoid drinking at some time or other the typhoid bacilli, but we can do much towards improving the condition of the digestive organs.

How many of us take a glass of water in one stream, and yet even a horse takes time to drink.

Proper eating and drinking will go far towards rendering harmless many of the bacteria that threaten our life on every side.

There is something in what we eat and drink, but there is a great deal in the way we eat and drink.—Health.

Hints for the Cook

SHIRRED EGGS.

Butter your shirring cups and place one tablespoon of bread crumbs in the bottom of each; break in an egg, season well with pepper, salt and celery salt, stand the cups in a baking pan half filled with hot water, and place in the oven for about four minutes, or until the whites are of a creamy consistency. Serve in the cups with a piece of butter and a tiny sprig of parsley added to each egg.

To a large cup of canned tomato add a bay leaf, a small slice of onion, a leaf or two of parsley, salt to taste, and one teaspoon of lemon juice. Cover and simmer for ten minutes, then strain it; return to the fire and thicken with butter and flour rubbed smooth; salt and pepper may be added to taste. Arrange slices of hot buttered toast upon a platter, and pour around them the tomato sauce. The dish may be garnished with slices of hard boiled eggs and parsley.

* * *

EGGS WITH MUSHROOMS.

Drain the contents of a can of mushrooms and cut in halves. Saute in hot butter from ten to twelve minutes; drain free from the butter and place in a shallow baking dish, seasoning with cayenne pepper, salt and a little parsley. Carefully break as many eggs as will cover the top, season with salt and pepper and cover with a thin layer of bread crumbs. Pour over this the butter drained from the mushrooms and bake about ten minutes.

WINDOW CLEANER

Editor Cultivator:—Please give me the name of some good article to clean windows other than soap or sapolio. C. C., Glendale.

You will find a preparation in the drug stores called Bon Ami that is good. So is a tablespoonful of ammonia in four quarts of water.

Adrift on times' relentless tide,
As waves that follow that waves,
God grant we leave upon the shore,
Some waif of good it lacked before.

Some seed, or flower or plant of worth
Some added beauty to the earth,
Some larger hope, some thought to
to make,
The sad world happier for its sake.
—John GreenleafWhittier.

Mrs. Suburb—You don't seem to have many visitors, Mrs. Meadow?

Mrs. Meadow—No; you see I don't keep a girl, and when my relatives come I expect them to help me with the housework.—New Yory Weekly.

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SALT LAKE ROUTE

EXCURSION RATES TO EASTERN CITIES.

The Usual low round trip rates to the east will be available this season from California and Nevada stations of the Salt Lake Route on account of various conventions as follows:

New Haven, Ct.—Knights of Columbus—Sell May 24, 25, 26—Return limit August 31. Rates will be announced later.

Denver. Colo.,—B. P. O. Elks—Sell July 17, 18, 19—Return limit Sept. 30. Rate $55.

Minneapolis, Minn.,—G. A. R.—Sell August 7, 8, and 9.—Return limit Oct. 31. Rate $70.

Milwaukee, Wis.—Order of Eagles—Sell Aug. 7, 8, 9,—Return limit Oct. 31. Rate $74.50.

Also sell July 2 and 3—Return limit 90 days Sell August 7, 8, 9, and Sept. , 9 and 10—Return limit Oct. 31.

Chicago, Ill.,—72,50—St. Louis Missouri, $67.50.

St. Paul, Minn. $70,00—Minneapolis, Minn. $70.00.

Kansas City, Mo.,—$60.00—Omaha, Nebraska, $60.00.

Council Bluffs, Iowa, St. Joseph, Mo. $60.

Tickets will be sold going via Salt Lake Route and connections and returing via entirely different route, if desired. For full particulars as to stop off privileges, etc., application should be made to Salt Lake Route Agents.

The excellent train service and equipment of the Salt Lake Route and great variety of routes offered affords opportunity for an enjoyable trip. Inquiries from prospective travelers will receive prompt attention from Agents or T. C. Peck, A. G. P. A., Los Angeles.

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Full information at 261 S. Spring St., Los Angeles, or from any agent

SOUTHERN PACIFIC

EDITOR'S QUESTION BOX

Continued from Page 447

congestion of the lungs. The bacon and pepper was the best thing you could have given the older hens, honey is usually my remedy for bronchitis, but I see that you want something that you can put into the water for the whole little flock. The aconite, bryonia and spongia comp. tablets, which you can get at any drug store, are the best thing I know of. The strength is 2X. (2X means 1-100 of a grain drug strength each tablet.) The dose is for each fowl one tablet two or three times a day. For flock treatment use twelve tablets in a pint of drinking water.

The most necessary thing is to find out how or why they are taking cold. Bronchitis is caused by crowding in the house at night, becoming over heated and taking cold on coming into the cool morning air, by being housed in too close or warm a building, by currents of cold air, by irritating particles of dust or lime. Find out the cause and remedy it.

Give light and nourishing diet, such as bread and milk, or rice boiled in milk with a tablespoon of ground cinnamon to the pint, keep the chicks free from lice and mites.

* * *

Stone Jar for Eggs. (J. M. W., Santa Paula.) Please answer through the columns of the Cultivator. I have a stone jar formerly used for pickling pork. It became so badly cracked that it leaked, but since I have had it wired so it is water tight. Would the crack taint it for using for a receptacle for eggs in water glass solution? If so would a coat of asphaltam varnish remedy the evil, and if not, is there anything that would?

Answer. If your stone jar does not leak it will keep the eggs well, but if it leaks the solution will leak out and the eggs will not keep. There would be no use in varnishing it, the soda would eat through the varnish.

* * *

Turkeys. (D. B. B., Campbell.) You would do me a favor if you would answer these questions through the Cultivator:

1. Is there a book or pamphlet on turkey raising in California?
2. Could turkeys be raised now and be old enough to use for breeding next season?
3. At about what age do the young turkey hens begin to lay?
4. If allowed free range how can one keep track of the eggs?

I have absorbed some points on turkeys through your department and any other hints would be appreciated.

I am one of your family of readers and was recently inspired to get an incubator of eggs and have them hatched for me. The first thing I thought of after the recent earthquake and I knew my relatives were safe was that in all probabilities those precious eggs were ruined. However, they were not injured in the least, for I have received word that they are hatching well. In a poultry supply store yesterday everyone reported that eggs were hatching as though nothing had happened to the earth's underpinnings.

Let me thank you in advance for your answers to my questions.

Answer. 1. There is no book specially written for California conditions on turkeys. You had better get "Turkeys," by the Reliable Publishing Co., of Quincy, Ill., price 50 cents. It contains articles on turkey raising from some of the best breeders in America.

2. The best turkeys are raised from two-year-old hens mated to yearling Toms, but a good deal depends also upon the breed and also upon how they grow and develop. White Holland turkeys develop and mature earlier than the Bronze. I have two White Holland hens I would like to sell as I have moved to a town lot.

3. At about ten months, but it depends upon the time of year when they are hatched, but they lay earlier here than in the East.

4. By patiently following them. For this reason I like the White Holland much better than I do the Bronze; they do not wander and are so tame they never give me any trouble. I know just about when they will lay and I fix a comfortable box or two or a barrel, and they keep to the same nest year after year.

I am much interested in what you tell me about the earthquake in regard to hatches, and rejoice with you that they were not injured by the shaking they got.

The Petaluma Incubator Co., recently closed a contract with Danger's Poultry Farm for fourteen incubators of the large 504 size; also for fifteen of the large sized brooders with capacity for 400 chicks each. Apparently the poultry people at Petaluma still believe in a big future for the poultry business and also believe in the merits of the Petaluma Incubator.

There are three essentials in the successful handling of young geese and these three should begin with large capitals. Keep them dry, warm and free from lice. Dampness and cold causes much of the mortality that takes place annually among goslings, and lice is responsible for the balance.

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The Produce Markets

Los Angeles Markets.

Los Angeles, May 9, 1906.

Potatoes, beans and onions are commodities which show a marked increase since the San Francisco disaster and a rise may be expected on all staple products.

Butter.

B. of T. Creamery, per roll	.50
Valley Creamery, fancy	47½@50
Coast, Fancy	47½
Cooking	19@20

Cheese.

Cal. 3-lb. hand	17½
Cal. Young America	17
California Anchor, Large	16
Northern	15½16
Domestic Swiss	20
Imported do	28

Eggs.

Eggs, Fresh Ranch	18
Northern Candled	16

Poultry.

Hens (dressed) per ℔	18
Young Roosters	22
Fryers	24
Broilers, per dozen	3.50@6.50
Old Roosters	12
Turkeys	22@27
Old Toms, Live	19
Young Toms, Live	19
Hen Turkeys, Live	19
Geese	17
Ducks	18

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock:

Hogs, 200 lbs.	6
Prime Steers	4½
Cows	3¼
Calves, per lb	5
Sheep, ewes, per head	4.50
Wethers	5.00

Potatoes.

Northern, per sack	1.60@2.00
Locals, per cwt	1.75@2.00
Locals, new, per sack	2.75@3.00
Sweets, white, per cwt.	3.00

Vegetables.

Onions, Aust. Brown, cwt.	2.00@3.00
Onions, Nevada	4.00
Garlic	7@8
Cabbage, per sack	75@85
Cauliflower, per doz	.60
Asparagus	6@7
Lettuce, per dozen	10@15
Bell Peppers	15@18
Chili Peppers	15@18
Cucumbers, per doz	.75@1.25
Radishes, per doz.	15
Lima Beans	10@15
String Beans	4@6
Beets	.40
Green Onions, doz. bunches	25@30
Carrots, doz. bunches	25@35
Turnips, doz. bunches	.25
Celery, per doz	45@50
Peas, per ℔	2@3
Oyster Plant	.40
Tomatoes, local	2.25@2.50
Parsley, per crate	50@75
Pie Pumpkin, per lb.	.01

Citrus Fruits

Lemons, Standard	1.25@1.50
Lemons, Choice	2.00
Lemons, Fancy	2.25@2.50
Navels, Choice	2.00@2.25
Navels, Fancy	2.50
Grapefruit	2.50@3.50

Fresh Fruits

Pippins	3.00
Gavos	3.00@3.25
Johnathan, Colorado	3.50
Missouri Pippins	3.25@3.50
Apricots, per crate	1.50@2.00
Strawberries	5@6
Dewberries	8
Bananas, per ℔	5@5½

Dried Fruits

Evaporated Apples, ch to fy	10
Apricots	5@10
Peaches	10½
Pears	11½
Santa Clara Prunes	4@8½

Beans, Dried.

Limas No. 1	5.50
Pinks, fancy	2.50@2.75
Lady Washington	3.15@3.20
Small White	3.60@3.75
Black Eyes	6.00

Honey.

Honey, comb frames	12@15
Comb, Light Amber	12@15
White, Strained, per ℔	6
Light Amber	5
Beeswax	25

Hay.

Barley, No. 1	14.00@16.00
Alfalfa, local	13.00@14.00
Alfalfa, Northern	12.50
Wheat, No. 1	15.00
Tame Oats	17.00

Grain.

Selling prices of mill stuffs f. o. b. cars L. A., in quantity, are:

Rolled Barley	1.40
Bran	1.25
Feed Corn Meal	1.45
Shorts	1.45
Wheat, per cwt	1.65
Cracked Corn	1.40
Oil Cake Meal	2.25
Cocoanut Meal	1.50

CITRUS MARKETS

New York, May 8.—Twenty-eight cars were sold at auction today. The market is very strong. The weather is favorable.

NAVELS (iced.)

	Averages.
Riverside, st, Riverside Ex.	$2.00
Eagle, xc, Riverside Ex.	2.55
Red Globe, xc, Riverside Ex.	2.75
Sweetheart, fy, Riverside Ex.	3.25
Teal, o r, Covina Ex.	2.50
Butterfly, ch, Riverside Ex.	2.90
Ben Hur, ch, R.-H. Ex.	2.55
Royal Knight, xf, R.-H. Ex.	3.15
Ben Hur, ch, San Antonio Ex.	3.20
Greyhound, ch, San Antonio Ex.	2.75
Violet, ch, Duarte-Monrovia Ex.	2.75
Squirrel, fy, A.H. Fruit Ex.	2.80
Square, o r, Riverside Ex.	3.05
Blue Globe, xf, Riverside Ex.	3.20
Quail, xc, O.-C. Ex.	3.25
Producer, fy, Redlands O. P.	2.55
Mispah, xf, Redlands O. P.	2.65
Producer, fy, Redlands O. P.	2.85
Aloha, ch, Redlands O. P.	2.55
Summit, xc, C.C.U., Redlands	2.55
Golden Eagle, st, C. C. Chapman.	2.60
Old Mission, ch, C. C. Chapman.	2.65
Old Mission, fy, C. C. Chapman.	3.05
Clover, xc, Redlands O. G. Assn.	2.70
Rose, xf, Redlands O. G. Assn.	2.95
Rose, xf, Redlands, O. G. Assn.	3.20
Red Keystone, xc, King Fruit Co	2.85
Blue Keystone, fy, King F. Co.	2.90
The Fates, ch, King Fruit Co.	2.95
Flower, fy, Upland District	2.85
Flower, fy, Upland District	3.10
Slover Mountain, fy, Colton	2.90

Tiger Head, xc, I. L. Lyon & Son	3.05
Lion Head, xf, I. L. Lyon & Son.	3.35
Tahoe, fy, Redlands G. O. Assn.	3.00
THOMPSON IMP. NAVELS (iced.)	
Orchard, o r, National Orange Co	3.40
Standard, st, Nat. Orange Co....	2.55
Butterfly, ch., Covina Ex........	2.70
Teal, o r, Covina Ex............	2.40
AUSTRALIAN NAVELS (iced.)	
The Fates, ch, King Fruit Co....	2.60
SEEDLINGS (iced.)	
Stork, xc, San Antonio Ex......	1.65
Senorita, st, Sparr Fruit Co.....	1.65
Ballet, xf, Sparr Fruit Co........	1.95
Orchard, o r, Nat. Orange Co...	2.55
Mission Bells, xc, A. B. Chapman	2.00
Lilac, ch, C.C.U., Pomona......	1.75
LEMONS.	
Orchid, o r, Altland Fruit Co...	2.45
Corwin, ch, W. S. Corwin.......	2.55
Corwin, fy, W. S. Corwin.......	3.20
ST. MICHAELS	
Laurel, xf, Call Fruit Co........	2.35
TANGERINES.	
Blue Globe, xf, Riverside Ex....	1.25
Lion Head, xf, I. L. Lyon & Son.	1.30
GRAPEFRUIT.	
Teal, o r, Covina Ex...........	2.75
Flower, fy, Upland District.....	3.60
Orchard, or, Nat. O. Co. (½s).	1.90
BLOODS (whole boxes.)	
Golden Rule, xc, Riverside Ex...	2.55
Eagle Head, xf, I. L. Lyon & Son	3.00
BLOODS (half boxes.)	
Greyhound, ch, San Antonio Ex.	1.15
Quail, xc, O.-C. Ex.............	1.20
Our Pride, xf, Riverside Ex.....	1.25
La Mesa, xf, Riverside Ex......	1.60
MEDITERRANEAN SWEETS.	
Orchid, o r, Altland Fruit Co....	2.15
Laurel, xf, Call Fruit Co........	2.15

CAN YOU ANSWER THESE QUESTIONS?

Where did alfalfa come from? What soil is best suited to alfalfa? What are the advantages of growing it? How is it best harvested, cured and fed? What kind of grain should be fed with Alfalfa? How does it enrich the soil? How should alfalfa be sown? What is the best method of selecting seed corn? How should it be stored? How can you improve the stand and increase the production of corn per acre? What is the best method of testing seed corn? What is a germination box? How is corn best prepared for the planter? What is necessary to get rid of the barren stalks? What are the best methods of cultivating corn? How can the wheat yield per acre be increased? What constitutes a good seed bed? Should clover be plowed under for wheat? Is corn stubble a good place for sowing wheat? How should wheat be sown in order to produce the best results? How should wheat be fertilized? Why does your soil run down? What are the leading elements of fertility? How can you secure them and keep them in the soil? How much fertility does each crop take from the soil? What is the actual value of farm manure? How should it be applied to produce best results? Will grain crops make good hay? What is the best method of seeding for hay? Is the modern gasoline engine a good power for the farm? What is the best sized gasoline engine to buy? What is a four cylinder engine? What does it cost to operate a gasoline engine? Is ensilage the best and cheapest feed for dairy cows? What is summer soiling? What are the correct proportions of lean and fat producing materials in a dairy ration? How much milk and how much butter should a good cow produce? What kind of separator should the cow owner buy? What is skim milk worth as food for stock? How much wheat should an acre produce? Is wheat good in the farm rotation? Does any crop leave a poison in the soil? Can the wheat yield be increased by seed selection and breeding?

Every one of these questions and a thousand others of interest and value to every farmer are answered in "Farm Science." It is a splendid volume of 128 pages, profusely and beautifully illustrated and containing eight chapters specially prepared by the highest authorities on the several subjects. "Alfilfa Culture in America," by Jos. E. Wing, Expert Agriculturist of Mechanicsburg, O. "Modern Corn Culture," by Prof. P. G. Holden, Iowa Agricultural College, Ames, Iowa. "Best Method in Seeding," by Waldo F. Brown, Farm Specialist of Oxford, O. "Increased Fertility," by Prof. Cyril G. Hopkins, Illinois College of Agriculture, Urbana, Ill. "Profitable Hay Making," by Prof. Thomas Shaw, late of Minnesota Experiment Station, St. Anthony Park, Minn. "Power on the Farm," by Prof. Fred R. Crane, Illinoise College of Agriculture, Urbana, Ill. "Up-To-Date Dairying," by Prof. Clinton D. Smith, Director of Michigan Experiment-Station, Agri-Grain Growing," by Willett Hayes, Assistant Secretary of Agriculture, United States, Washington, D. C. Every author is a master in his line and every subject is treated exhaustively in all its ramifications. The whole composes the most valuable and authorative work ever issued along these lines. The copy before us has so impressed its worth upon us that we urge every farmer reader of our paper to procure a copy at once. A book of such value cannot be secured at any price. However, any reader of this paper will receive a copy by enclosing 3 two-cent stamps and addressing "Farm Science," International Harvester Company of America, Chicago, Ill.

Kindly say to them that you saw this article in our paper.

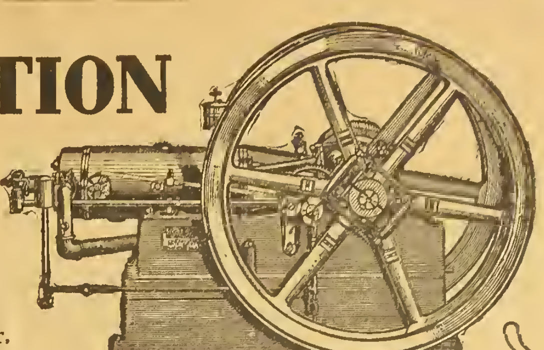
In another column appears the advertisement of the Economy Jar. Turn to that page and read the ad through again. The manufacturers of the Economy Jar are anxious to have the housewives of America appreciate how much their jar contributes to the health and pleasure of the household and the certainty and satisfaction of good home cooking.

Notwithstanding the fact that the agency of the Williams Telephone & Supply Co. in San Francisco was burned out with all others in the recent fire, they have already established new quarters in Oakland, as will be seen from their ad. in another column, and are ready to attend to business from that point as usual and invite your inquiries and correspondence.

E. M. Burnell is advertising eggs for sale from his Columbian Wyandotte pens. A fine variety and pure bred birds. See his card on poultry page.

Don't depend on the prayers of the man who lets his chickens roost in an uncomfortable house.

There are many theories about feeding fowls, but the man who gives plenty of a large variety of feeds will be pretty sure to come out ahead.



FOR
IRRIGATION
By
PUMPING

For all those who wish to irrigate by pumping, the I. H. C. gasoline engine is the one best power.

The difference between success and failure in an irrigation pumping plant is often a question of fuel.

The I. H. C. engines use gasoline—a cheap and easily transported fuel.

They take the least fuel and convert it into the most power.

They are unequalled when put against a steady load as in pumping, and sustain their full rated power with persistency and regularity.

They can be belted to any centrifugal or direct pump for lifting water from wells, canals, streams, etc.

Anybody can run them without expert knowledge or previous experience.

They can also be used as a general purpose engine for sawing wood, cream separating, feed grinding, etc.

They are made in several styles and sizes—

Horizontal and Portable—4, 6, 8, 10, 12 & 15 Horse Power.

Vertical—2, 3 & 5 Horse Power.

Call on local agent and examine these engines or write nearest general agency for illustrated catalog.

WESTERN GENERAL AGENCIES: Denver, Col., Helena, Mont., Portland, Ore., Spokane, Wash., Salt Lake City, Utah, San Francisco, Cal.

INTERNATIONAL HARVESTER COMPANY OF AMERICA, CHICAGO, ILL.
(INCORPORATED.)

A little six-year-old friend of mine came to me and threw herself into my arms, sobbing as if her heart would break, says Harper's Weekly.

"God doesn't love me any more," she wailed. "God doesn't love me."

"God doesnt love you! Why, dear, God loves every one," I assured her.

"Oh, no, he doesn't love me. I know he doesn't. I tried him with a daisy."

Piggmus—The automobilists seem to consider that there are only two classes of people in the world besides themselves.

Dismukes—What are the classes?

Piggmus—Those who can get out of the way in time and those who can't.

Dismukes—Ah, I see! "The Quick or the Dead."—American Spectator.

To the University of California falls the honer of President, and Harvard University secures the position of Vice-President of the Association of American universities for the ensuing year.

Well DRILLING & PROSPECTING MACHINES.
Fastest drillers known. Great money earners!
LOOMIS MACHINE CO., TIFFIN, OHIO.

OPIUM and Whiskey Habits cured at home without pain. Book of particulars sent FREE. B. M. Woolley, M.D., Atlanta, Ga., 103 N. Pryor St.

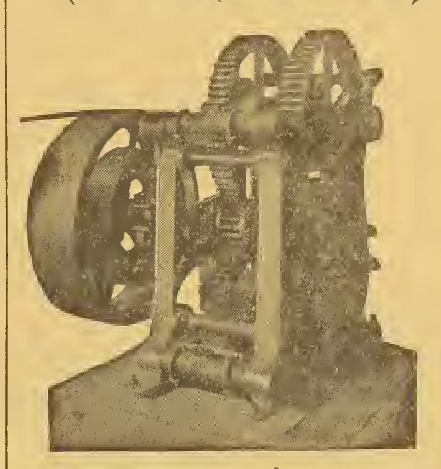
ORPHANS RECEIVED

South Pasadena, April 23, 1906.

The following named children have been admitted to the Boys and Girls' Aid Society of South Pasadena sinee last report:

Orphans—Charles Davis, Amer., 12 years of age, blue eyes and brown hair.

Half orphans—Albert Kujaneçk, Ger., 13 years old, grey eyes, dark brown hair. Leroy Hunter, Amer., 7 years old, brown eyes, dark brown hair. Ida Marks, Port., 10 years old, brown eyes and brown hair. Marie Marks, Port., 8 years old, brown eyes and brown hair. Bently Stinhoff, Amer., 10 years old, blue eyes, light brown hair. Walter Higgins, Amer., 12 years old, blue eyes, light brown hair. Maud Hogan, Amer., 13 years old, blue eyes, brown hair. Geo. Mazet, Mex., 10 years old, black eyes, brown hair. Leonard Kujaneck, Ger., 12 years old, grey eyes, brown hair. Walter O'Brien, 7 years old, Amer., blue eyes, brown hair. Arthur O'Brien, 9 years old, Amer., blue eyes, brown hair. Joseph Gardner, Amer., 13 years old, blue eyes, black hair. Harry Gardner, Amer., 13 years old blue eyes, black hair Joseph Marks, Port., 5 years old, grey eyes, brown hair. Guy Frits, Amer., 8 years old, brown eyes, brown hair. Velma Frits, Amer., 6 years old, blue eyes, brown hair. Eva Dutra, Amer., 9 years old, brown eyes, black hair. Orris Mills, Amer., 7 years old, brown eyes, brown hair. Lucile Mills, Amer., 6 years old, blue eyes, golden hair. Frank Escamille, Mex., 6 years old, black eyes, black hair. Hazel Evans, Amer., 11 years old, blue eyes, brown hair. Leo. Rowan, Amer., 9 years old, black eyes, brown hair. Martin Friedell, Amer., 5 years old, blue eyes, brown hair. Sarah Carrillo, Mex., 12 years old, black eyes, black hair. Felisino Carrillo, Mex., 10 years old, black eyes, black hair. Marino Carrillo, Mex., 8 years old, black eyes, black hair. Tom Carrillo, Mex., 5 years old, black eyes, black hair. Ward Clarke, Amer., 8 years old, blue eyes, brown hair. Hartley Porter, Amer., 12 years old, blue eyes, brown hair.



The Pomona Pump

The New Pomona Pump is now being manufactured with machine cut gears and machine cut steel or bronze pinions. The pump fitted with this kind of gearing runs as smooth as a clock and there is absolutely no noise or vibration. The company have recently taken contracts for installing their largest sized pump with this class of gearing for the Artesian Belt Water Company of San Dimas, Western Water & Power Company of Glendora and other large irrigation companies. They are required to furnish these pumps with cylinders up to 12 inches in diameter and 72 stroke which has capacity of over 60 Miner's inches of water. The valves are made entirely of phosphor bronze with ground metal taper seats so there is very little obstructiin to the water in passing through them and it is impossible to clog them with sand. These, in connection with machine cut gears, in the pump head, make a strictly high grade pumping outfit and the best by a long ways of anything on the market today.

This head and valves are both protected by United States patent. Beware of infringing as both manfacturer and user are liable.

The company has recently installed one of their latest improved heads for the Santa Auita Land Company, a subdivison of the Baldwin Ranch. Below is what the owners have to say about it:

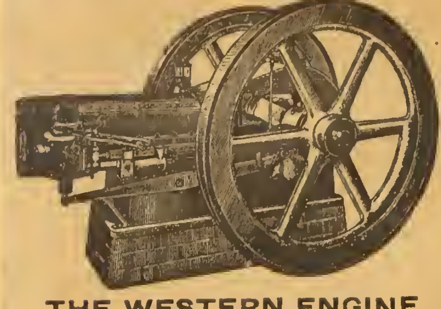
"The new 38 pump you installed for us on our tract on the E. J. (Lucky) Baldwin Ranch is giving us satisfaction in every way. We think we have the very best that money will buy. Both as regards to pump, material used and installation. We made an excellent change when we removed the pump we had been using and installed your make."

We have pleased these people and there is no reason why we cannot please you.

Send for catalog to

The Pomona Manufacturing Co.
Pomona, California

THE WESTERN GAS ENGINE



THE WESTERN ENGINE
Maximum Power at Minimum Cost

"From Factory Direct to User"

Designed and built by Western experts for Western use with Western fuel. In construction the Western embodies many original, yet practical ideas, which place it in advance of any other make on the market today. The simplest, strongest and best engine for

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Any Size from 5 to 500 H. P.

Burns cheapest fuel—gasoline, distillate or crude oil—with a saving of 20 to 40 per cent over any other style. **Send for Illustrated Catalogue** fully describing every detail of construction; tells **how** and **why** the Western excels all others; it gives the facts—the proof. Learn what Western engines are doing for others. Send your name today—ask for latest issue, A6.

WESTERN GAS ENGINE CO.
908-932 N. MAIN ST. LOS ANGELES, CAL.

RUBEROID ROOFING

The peer of all with 14 years' record for durability and efficiency.
Cheapest because best.

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Both Phones 679 242 to 248 So. Los Angeles St., Los Angeles, Cal.

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MADE FROM CALIFORNIA REDWOOD OR SELECTED PUGET SOUND YELLOW FIR **WOOD PIPE** WOODWARD PATENT MACHINE BANDED PIPE
WHEELER PATENT CONTINUOUS STAVE PIPE
BORED WOOD WATER PIPE

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A booklet, "The Whole Story About Wood Pipe," mailed free upon request

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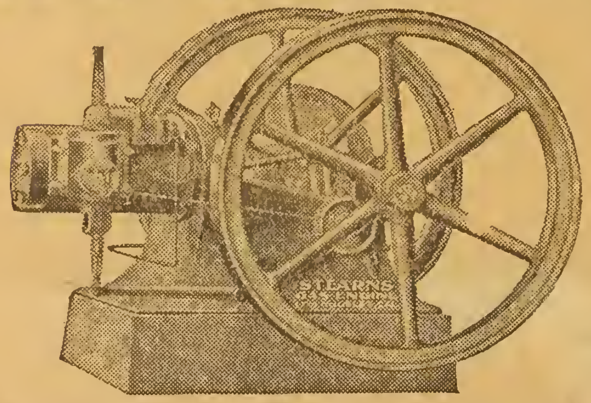
STEARNS GASOLINE OR DISTILLATE ENGINE



Has many points superior to any other engine.

Hundreds in Use

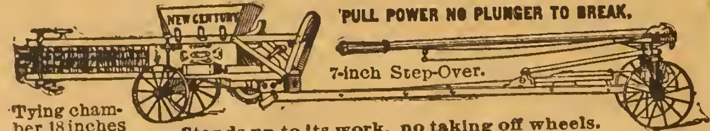
Every One Satisfactory

Built for California cheap fuel.

For further information, write

STEARNS GAS ENGINE WORKS 1001-3-5 NORTH MAIN STREET
LOS ANGELES, CALIFORNIA

NEW CENTURY HAY PRESSES



'PULL POWER NO PLUNGER TO BREAK.

7-inch Step-Over.

Tying chamber 18 inches off ground.

Stands up to its work, no taking off wheels.

STRONGEST PRESS ON EARTH. ALL IRON AND STEEL.

Constructed especially for heavy California hay baling. Write for proposition to ship you a New Century on **10 Days Free Trial.** Sold on easy payments. Shipped direct from warehouse in Los Angeles. For full particulars address

A. C. TURNER, 624 WEST TENTH ST., LOS ANGELES, CAL., or
WESTERN STEEL & WIRE CO., 202 E. OSAGE AVENUE, KANSAS CITY, KANS.

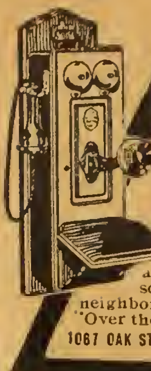
NO, THIS IS NOT AN ARTESIAN WELL, BUT

AN IRRIGATION PUMPING SYSTEM

SUPPLIED BY

S. J. SMITH MACHINERY CO.

POWER PLANTS, PUMPING MACHINERY AND WATER SUPPLY GOODS 212-214 S. Los Angeles St., Los Angeles, Cal.



NECESSITY vs. LUXURY

The day has gone by when the farm telephone is considered a luxury—time was and not so long ago at that, when a telephone in a farm-house was looked upon as such. ***Today it is a necessity.***

THE WILLIAMS FARM TELEPHONE

has had a lot to do with bringing about this change, making it easy for the farmer to form his own telephone company at no great cost—keeping him ever in touch with his doctor, dealer, banker, freight-agent, and all others in a business way—to say nothing of the social side, putting him in communication with his neighbors at will. Think it over and write us for booklet "Over the Wire." **THE WILLIAMS TELEPHONE & SUPPLY CO.**

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Caustic Soda

60%, 70%, 74% 76%, 78%, 99%. Powdered and Solid. Full information cheerfully given. All goods guaranteed. **M. Bettman Co.** 1355 Post St. San Francisco

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U. S. Carbolic Insecticide

Trade Mark **TREE WASH** Registered

To grow fruit profitably must become a study with the grower, and to raise it successfully he must be constantly watching and guarding against the pests that attack both fruit trees and vines.

This insecticide requires no heating or boiling of water, but is used simply by diluting with cold water, assimilating perfectly, requiring no agitation, forms no sediment, no clogging of nozzles, and will not injure the hands in the least, but will, like carbolic acid, heal and cure sores if on them. It is cheaper than any other preparation or method, considering the results obtained.

The best fertilizer to the trees. The one that leaves them clean and healthy. The one that brings results and pleases. The easiest prepared for spraying.

Information and testimonials on application to

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Portland	Sacramento	Stockton	Oakland
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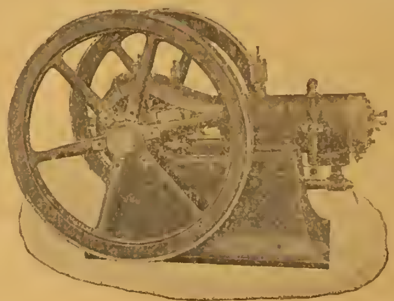
THE CALLAHAN DISTILLATE ENGINE

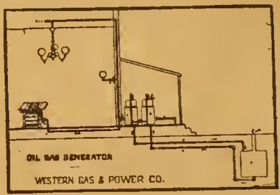


A first class Engine at a moderate price.

It is not how much you pay but what you get for your money.

Price Machinery is a good investment. Permanent installations always.

G. W. PRICE PUMP CO.
105 Eighth St., Oakland, Cal.
Write for Catalogues



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For Lighting, Heating, and Cooking.

A beautiful 35 c. p. light for 5 hours for 1 cent. Twice as cheap as acetylene for lighting. Seven times as cheap for cooking. Absolutely safe, easily installed, guaranteed. No odor no smoke,—does not clog burners. Automatic in every way. N winding, no pumping. Write today for "red" catalogue to

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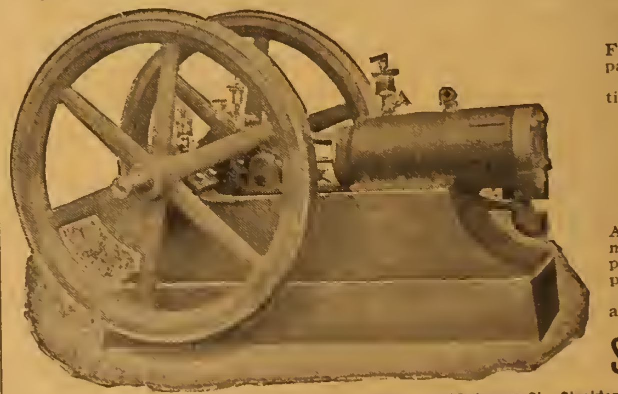

Are Strong and Durable

Fully guaranteed in ever particular.

We make complete Irriga tion Outfits.

Samson Centrifugal Pumps

Are the best. The enlarg ment of our factory makes possible for us to mak prompt delivery.

Send for our new catalog and estimates.

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Cylinders In Fifty sizes and lengths For Every service

A. T. AMES
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CALIFORNIA CULTIVATOR

DEVOTED TO
AGRICULTURE
IN ALL ITS BRANCHES

LOS ANGELES　　MAY 18, 1906　　SAN FRANCISCO

ALFALFA STACK ON THE EMPIRE RANCH, LEMOORE, CAL. Courtesy Percy H. Clark Co.

THE ALFALFA FAMILY

Alfalfa (Medicago sativa) belongs to a large botanical genus, numbering some fifty species, which grow over central and southern Europe, and especially abundantly in the Mediterranean littoral, as also in Central and Farther Asia, and the Cape of Good Hope region. Of all these species, but four or five are of economic interest or value. Beside alfalfa itself, which is perennial, there are three annual species that have been introduced into America. These species have some local and restricted forage value, but the fact that they are not perennial plants renders them inferior to alfalfa.

Veterinary

BY DR. W. J. OLIVER,
318 East Second St., Los Angeles

To the end that this department may be made as valuable to the subscribers as possible, we ask observance of the following: Be sure to state in full the history of the case, location of the disease and the conditions under which the animal has been kept just before and since the disease appeared. Give your name and address, which will not appear in the paper if you so request. No charge whatever is made for such questions as are answered through the columns of the Cultivator, but when an immediate mail answer is wished Dr. Oliver asks an additional fee of $1.00 and will give immediate attention and reply by mail. In such case write Dr. W. J. Oliver, 318 E. Second St., Los Angeles, Cal.

Questions should be in by Monday to be answered in the following Friday's paper.

INTESTINAL WORMS.

One of my mares is dropping out worms. They are from 5 to 10 inches long. What are they? Are they injuring horses? What is the cause? What is the remedy? Hoping to find answer in your paper.

M. N., Montalvo.

Those are intestinal worms. When they exist in great numbers they do effect the animal and sometimes cause indigestion or colic. Give the following mixture night and morning in bran mash or any damp feed. Best given on empty stomach: Sulphate iron, powdered, 6 oz.; Areca Nut, powdered, 3 ozs.; arsenis acid, ½ oz.; mix. Give dessertspoonful lever full to dose for four days. Then stop for four days. Repeat.

HEREDITARY MANGE.

Editor Cultivator:—Dear sir: I have a valuable young mare which will be three in June that has the mange or something like it. Breaks out with blotches and itches terribly, especially on her legs. I had her in pasture the two last seasons and she seemed to be as bad while on grass as on dry feed in the barn. She bites her legs until they bleed at times and flies bother her badly. I had recommended to me fish oil and carbolic acid, 1½ pint to a gallon of oil, but that seems to fail to cure it. It seems to allay the itching for a while but it comes back again. Could you give me a remedy through your paper and oblige,

M. E. F., Rialto.

This is very likely hereditary mange and is difficult to cure. You will have to treat her both internally and externally. Give internally twice a day dessertspoonful of Fowler's Solution of Arsenic. External, rub in a little of following once a day after washing the parts well with soap and water: Corrosive sublimate, 1½ ozs., alcohol, 8 ozs., shake until dissolved in quart bottle. Then fill with water and apply as directed.

SKIN ERUPTIONS.

Editor Cultivator:—I am desirous of asking what is affecting my cow. There is a condition, seemingly, under the hair, which breaks out in spots ranging from an inch in length to about the size of a dollar. These have the appearance of a cut at times; seem like a patch of small granulation; red. Give her no trouble apparently; no loss of appetite or falling off in milk. —J. B. J., San Jacinto.

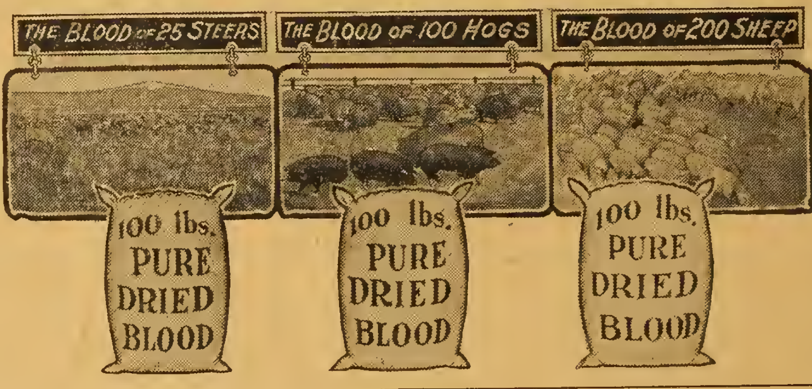
Apply a little of the following daily to the diseased parts: Eucamphol 3 ounces to pint of water.

WARTS ON COWS.

Editor Cultivator:—Please tell me how I may remove warts from a cow's eye, one about the size of a bean in the corner on the part between the ball and the lid. What injury will it do if not removed?—G. A. M., Gilroy.

The wart will do no harm, but you can cut it off with a sharp pair of scissors and apply a little borac acid on the part.

The Hearts and Blood of Half a Hundred Animals


THE BLOOD OF 25 STEERS
THE BLOOD OF 100 HOGS
THE BLOOD OF 200 SHEEP
100 lbs. PURE DRIED BLOOD
100 lbs. PURE DRIED BLOOD
100 lbs. PURE DRIED BLOOD

DID YOU KNOW?

It takes the blood of 20 steers, or the blood of 100 hogs, or of 200 sheep to make 100 pounds of pure dried Blood Meal. Therefore, pure dried Blood Meal is more valuable than people think it is. When you consider that it takes the blood from so many animals to make a single sack of dried Blood Meal, do you think you can buy pure, unadulterated Blood Meal for any such price as $3.00 per hundred pounds? Well, I guess not. If you get it for $4.25 per hundred pounds you are getting it cheap, and if you buy any grade of Blood Meal for a less price, you don't know what on earth you are getting.

THE BLOOD OF HALF HUNDRED ANIMALS

A pound of pure, dried Blood Meal is a more substantial food for flesh and egg making than any ten pounds of grain food, and yet, when you buy COULSON'S IMPROVED MASH EGG FOOD, you get a feed, a ton of which contains the cooked blood of HALF A HUNDRED ANIMALS, besides several hundred pounds of cooked Meat Meal, fresh ground Bone Meal, etc., all fine-ground into meal, and is so thoroughly mixed up by special mixing machinery with the richest grade of Middlings, Shorts, Cocoanut Meal, etc., so as to make a RICH, BALANCED RATION for making heavy egg-production.

NO WONDER THAT IT MAKES HENS LAY.

Is it any wonder that hens fed on this kind of feed will lay 200 eggs a year, or more? It's a mighty rich feed, and in order to assist the fowls to get the value from it, we mix a few ingredients with it, that will assist the digestion and assimilation of all the good things in the feed.

IGNORANT PEOPLE BUY CHEAP STUFF

Some poultrymen are using cheap Blood Meal that is adulterated with half tanbark (or other worthless material, of no use as food) which they could readily see if they only would know enough to LOOK at it.

And yet, they buy this cheap Blood Meal, and other fertilizer trash, and try to make Egg Food out of it, or mix up a feed of their own—and call themselves "SMART MEN." It's like a farmer trying to compete with a harvester, and who uses only a scythe and a rake.

When a poultryman buys COULSON'S IMPROVED MASH EGG FOOD, he gets a choice, rich feed, that contains GOOD, PURE, WHOLESOME INGREDIENTS that will do his hens good, and enable them to produce an abundance of eggs.

INTELLIGENT MEN, that's the kind that buy COULSON'S IMPROVED MASH EGG FOOD.

YOU LOSE MONEY ON UNHEALTHY HENS.

It pays to keep machinery in good order to prevent waste. It pays to keep your hens in order to prevent waste. Do you realize that a hen, whose liver and working machinery is not in healthy condition, eats food which passes out of her without being half digested, just as whole grain would come through a dull mill, without being half ground?

GOOD FEED MAKES GOOD HENS.

It is on account of this waste that so many poultrymen remain poor; they do not realize that their fowls do not get two-thirds of the value of the feed. But when the hens are fed COULSON'S IMPROVED MASH EGG FOOD, they get ingredients mixed in the feed that put the hen's working organs in good condition, so that they can assimilate and digest the good materials that are in the feed, and make two eggs where they only made one before.

If anybody tells you that COULSON'S IMPROVED MASH EGG FOOD contains any trash, you can put it down, that either they have been MISINFORMED, or else, they are WILLFUL MISREPRESENTATIVES of the truth.

$300.00 FOR FEED—$900.00 WORTH OF EGGS.

During the past year (1905) Mr. J. Christensen, of San Luis Obispo, Cal., fed his flock of 300 laying hens on COULSON'S MASH EGG FOOD every day, and the total cost of all the feed used, during the year, was $300. He sold, during the year, $900.00 worth of eggs, making $600.00 profit.

5 WEEKS OLD CHICKS—3½ CENTS EACH.

Mr. Christensen hatched out 312 chicks, and fed them entirely on COULSON'S GROWING CHICK FOOD, dampened with a little milk.

He purchased 5 sacks of it, for which he paid $11.75. When the chicks were 5 weeks of age, he had 310 good, strong, healthy chicks; only two having died, and out of the 5 sacks of feed, he still had a bucketful left. So the cost of feeding them COULSON'S GROWING CHICK FOOD, up to 5 weeks of age, was about 3½ cents per chick, and raised 310 out of 312.

4 TO 4½ CENTS A MONTH TO FEED A HEN.

It costs 4½ cents a month to feed a hen COULSON'S IMPROVED MASH EGG FOOD, and it also costs 4½ cents a month to feed the cheaper feeds, as you have to feed so much more of them. By feeding COULSON'S IMPROVED MASH EGG FOOD, you will get the most eggs, not only now, but next July, and next October; and your hens produce for you, at least, $1.00 per year more profit than what they have ever done before.

ASK YOUR DEALER, or write to FACTORY.

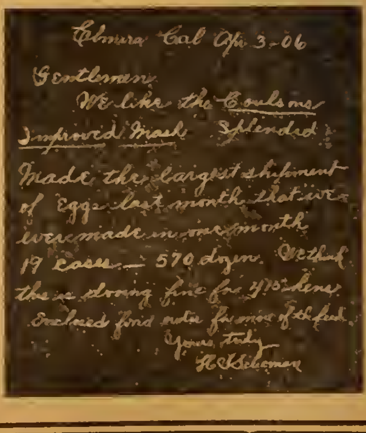
1736 Berkeley Way,
Berkeley, Cal., April 3, 06.
Coulson Poultry & Stock Food Co.,
Petaluma, Cal.

Gentlemen:—

I have been using your EGG FOOD for some two years, and will say that it has given me splendid results. My hens are in fine condition, and I can highly recommend the food.

Yours very truly,
(Signed) JOHN BARE.

P. S. We find the eggs from our hens are exceedingly fertile—from one lot of 200 eggs, I hatched 180 chicks.



Elmira Cal Apr 3-06

Gentleman

We like the Coulsons Improved Mash Splended

Made the largest shipment of Eggs last month that were ever made in one month 19 cases — 570 dozen. We think they are doing fine for 415 hens.

Enclosed find order for more of the feed.

Yours truly
[illegible]

ASK YOUR DEALER OR WRITE TO
COULSON POULTRY & STOCK FOOD CO., PETALUMA, CALIFORNIA

CALIFORNIA CULTIVATOR

Vol. XXVI—No. 20 LOS ANGELES, CAL., FRIDAY, MAY 18, 1906 Subscription $1.00 a Year

Transportation of Fruit in Refrigeration

By C. Harold Powell, Presented Before the American Society of Refrigerating Engineers

I am glad of the opportunity of bringing before a body of Refrigerating Engineers some of the problems that confront the fruit industry in the extension of the American fruit trade. I refer especially to the difficulties that arise in shipping perishable fruits under refrigeraton.

The United States stands first among the nations as a fruit growing country. No other country has developed the industry on the scale that our commercial orcharding has attained. The tremendous extension of the railroads since the civil war, and the American aptitude for developing new industries, has opened vast geographical areas in the United States where fruits of various kinds flourish more abundantly than other products of the soil. California has a peerless reputation throughout the world for the products of her orchards and vineyards, western Michigan for its peaches, Florida for subtropical fruits, the Carolinas for strawberry, and western New York for apple orchards. Orchards are being planted throughout the United States more rapidly than ever before, and new horticultural regions are springing up in the East and the West as the facilities of transportation are extended, and as irrigation and other improvements in modern agriculture make fruit growing possible where land was formerly unproductive.

* * *

The Demand for Fruit Increasing.—There are abundant reasons to suppose that the present period is not more than the infant stage of the American fruit industry. The demand for fruit is increasing with leaps and bounds throughout the civilized world. It is passing from a luxury to a staple food. In the United Kingdom the consumption of foreign apples has trebled in the last six years. The demand for various fruits has grown not less rapidly in our domestic markets. Our urban population is increasing more rapidly than ever, factories are building more numerously than farms, thereby increasing the demand for fruits as never before. We have no statistics on the subject, but our impression is that the increased demand for fruit is more than keeping pace with the increased production from the areas that are constantly coming into fruitfulness.

* * *

The Export Trade.—There is an unlimited opportunity for the development of the export trade where the use of fruit has had a phenomenal increase in the last thirty years. Great Britain paid over twenty-five million dollars in 1904 for her imported fruits, of which about five million dollars worth or less than 14 per cent. came from the United States. Her import fruit bill amounts to more than the total import and export fruit trade of the United States. Our foreign apple trade is the only fruit developed to any extent, the United Kingdom securing from the United States over 50 per cent. of the imports, which amounted to nearly ten million dollars in 1904. We sent only about seventy thousand dollars worth of the ten million dolars worth of oranges imported by the United Kingdom in 1904. The orange is the largest single import item in the fruit bill of the United Kingdom. The trade is monopolized by Spain which furnished from 85 to 90 per cent. of the supplies. American oranges are luxuries in European markets. The California navel is superior in size and appearance to the best European oranges, and are prized highly by those Europeans who are fortunate enough to know them. Here is a golden opportunity for the California navel and Valencia, two varieties of superb shipping quality. Of nearly nineteen million dollars worth of miscellaneous fruits, such as the peach, pear, plum, cherry, and others, exclusive of the banana, imported by the United Kingdom, we send not one-quarter million dollars worth, yet our peach, pear, plum and some other fruits can be exported under favorable conditions of transportation. The opportunities for trade on the continent of Europe are not less attractive, and the time is coming when there will be a big demand for American fruit in the markets that are tributary to the Pacific.

* * *

Over-Production the Result of Poor Distribution.—The future development of the American fruit industry depends on the ability of the producer to lay down his crops quickly and in sound conditions in distant markets both domestic and foreign. Efficient transportation is the keystone which must determine the stability of the industry. So called overproduction is the result of an inadequate system of distributing a crop widely and safely. Inadequate transportation means temporary gluts followed by barren markets. Under a proper system of distribution, there is little danger of the over-production of most kinds of American fruits, if a high standing of grading and or quality is maintained.

Taken as a whole, the American fruit transportation service is the best in the world. We have the only highly developed fruit car service in existence. Fruit is distributed more widely, in quicker time, in better condition and at cheaper cost here than in any other country. The fruit crop requires special facilities for transportation. It is the most perishable commodity that the car line handles. It deteriorates quickly from over-ripeness or from decay. It must be handled carefully by the grower, it requires quick refrigeration and uniform service on the part of the car line and rapid schedules on the part of the railroads. The fruit-car service as a distinct part of transportation is hardly more than 25 years old in America. There has been a gradual improvement along all these lines since its establishment, but we have reached a time in the history of the fruit trade where considerable additional progress must be made in the methods of handling fruit for transportation if the fruit industry is to be developed to the largest extent through a wider distribution in domestic and foreign markets.

* * *

Weakness in the Methods of Fruit Handling.—One of the principal difficulties that the fruit grower or shipper has to face in extending the fruit trade is the limitation in the distribution of fruit on account of the ripening and the development of decay that may occur in refrigerator cars. In ordinary practice, fruit is loaded in cars in a hot condition. It requires several days after the friut is loaded to reduce the temperature of the fruit to a degree of cold that retards the ripening and the decays. During the first few days the car, especially in the top, is warm. The ripening springs forward during that time, and, as the atmosphere is moist, the rots may begin to grow vigorously. These are fundamental difficulties in the present method of handling fruits for transportation. They have a far reaching influence on the development of the fruit trade. They limit the distribution of the perishable fruits, thereby preventing the greatest development of distant domestic and foreign markets. They also make it necessary to pick the summer fruits prematurely to protect against the ripening in transit, thereby placing enormous quantities of insipid, flavorless peaches, plums and other fruits before the consumer.

* * *

How the Peach Industry is Affected—I will endeavor to make these problems clear by a few specific examples. The Georgia peach is limited to markets within three to five days from the orchards. The fruit is shipped in carriers, usually loaded in the car five tiers high. The peaches range from 75 to 95 degrees Fahr. when placed in the car. Under the best carline service, the temperature of the fruit in the bottom of the car may drop to 40 to 50 degrees in two to five days. The temperature of the top tiers of fruit may be 10 to 15 degrees higher. On arrival at destination, especially with the early varieties, or, in all varieties in wet seasons, the bottom tiers of peaches may be sound, while the top tiers may have developed from 5 to 30 per cent of soft and decayed fruit. The bottom tiers could be shipped several days longer, but the distribution of the crop is limited by the probable condition of the fruit in the top of the car. We know that the Georgia peach can be stored safely in a temperature of 35 to 40 degrees for two weeks. We know that the Georgia peach can be shipped to the markets of the United Kingdom, if the shipping season is favorable and the conditions in transit are right. The problem, therefore, that the Georgia peach grower would like to have solved is (especially as he has twenty million trees that may bear in the next few years) and the problem is equally important in all of the peach growing sections in the south—how can the handling of the fruit be modified so as to insure its safe arrival in more distant domestic and foreign markets. On the solution of this problem will depend in a large measure the permanent stability of the enormous capital invested in Georgia peach lands.

Let us examine the relations of the present methods of handling the California peach for transportation to the conditions of the industry. Grown in a semi-arid climate the Pacific Coast fruit is dryer that the eastern grown fruit. It has wonderful shipping qualities. The fruit is wrapped and packed in 20-pound boxes, which are stacked in the car about ten tiers high. The fruit is distributed throughout the United States and Canada, and to a limited extent, to European markets. The trip across the continent averages about 10 days, and the entire trip to the United Kingdom less than 20 days. The California shipper has the same trouble as the Georgia shipper with the top tiers of packages. These tiers are often marked and sold separately. The fruit in them arrives in New York in all stages of maturity from full ripe to moldy, while the peaches in the bottom tiers may be hard and sound.

The California peach is frequently loaded at a temperature of 95 to 100 degrees. At the end of five to ten days the temperature of the fruit may drop to 40 to 50 degrees. On account of the smaller package, the closer packing in the car, and the wrapper on the fruit, it requires nearly twice as long to cool the fruit as it does the Georgia peach packed unwrapped in more open carriers. The California fruit, therefore, continues to ripen several days after loading, even when the bunkers of the car are filled continuously with ice. To protect against this ripening in transit the peach grower has to pick the fruit at a very immature stage of develop-

Continued on Page 474

Deciduous Fruit Culture

BY J. W. MILLS, POMONA, CAL.

HARDPAN ORCHARDS.

There will be an increased activity in fruit tree planting during the next few years. Fruit growing has paid in most cases and there seems to be a bright future for it. Orchards that are planted on land that is of average quality will bring fair returns, other things being equal.

As in orange growing there will be deciduous trees planted on land that is not fit for fruit trees. The great valleys of the north have an immense area that comes under this class· Hardpan land will produce a few good crops of grain if the season happens to be favorable for that class of land. Much rain will destroy crops on such land while it will make big crops on well drained land· Seasons of light rainfall are favorable to hardpan sections as it takes little water to fill it and the hardpan strata hold the water close to the surface. This is what makes such land worthless for fruit growing. Trees may and often will do well there for a year or two,' but soon as the roots get down where they should commence to do business, water that is held by the hardpan will stagnate around them and that ends the life of the tree.

It is a common idea that pears may be grown to advantage on very wet soil and this is true to a certain extent. This fact has induced some growers to try pears on hardpan land. We do not know of a case where it has been a success but we do know where it has been a failure. Trees planted in situations where good deep soil tapers off into the harpan class will start out and keep about even for the first year. Each succeeding year will show a growing difference in the size and vigor of the trees on the different knds of soil. Nothing will make a poorer showing on this poor land than Bartlett pears. We have seen this tried to a finish·

Peaches planted on the same kind of land grew to be two years old when the root rotted off and the time and and trees were lost. This was where the hardpan was two feet from the surface and the drainage was poor. On an adjoining slope where the hard layer was under six feet of clay, peach trees produced crops of fine fruit.

* * *

OFF BLOOMS.

We recently noticed in the coast region in Orange county, peach trees that had fully leaved out over the greater part of the tree and had set a good crop of fruit over most of the tree, but a number of branches were just putting out a fine lot of bloom. These were at least a month behind time and seemed to promise a late crop of fruit. Such occurrences have been common in Southern California for a number of years and seem to be due to sudden changes in the weather. Trees thus affected always lose vitality and soon become worthless. The long branches that usually are bare of leaves during the greater part of the summer, should be cut off so that all the vigor of the tree may be thrown into the actively growing portions. These parts which are dormant require a great deal of sap and there is no return for that amount drawn from the tree.

VINEYARD QUESTIONS

Editor Cultivator:—I have a three year old vineyard of Zinfandels and being a new beginner would like to ask you some questions. How can I detect the Anaheim disease? All of my vines made a very rank growth last year and are doing well this year with the exception of a few here and there scattered through the field, which do not seem to start out at all and yet the vines look as healthy as any of the rest. I find upon digging around the roots that suckers are coming up. Do you know the cause of it?

What implement is best to use for applying sulphur to my vines to prevent mildew? I cannot find anything in the Los Angeles market. I have used a sack but do not like it. It gets wet with dew and does not work well. I tried a flour sack but it does not hold enough.

Is it just as well to throw the sulphur on the ground under the vines as it is to put it mostly on the top of the leaves in the center as I did last year?

Do you have to sulphur table grapes the same as wine grapes and when is the proper time to do it?

H. J. A., Toluca.

The sprouting of the vines from below the ground with a cessation of growth of tops is an indication of Anaheim disease. It is usually preceeded however, by indications that are quite plain, the summer before.

These are usually an abrupt change in maturity of the canes, patches of green being surrounded by ripened wood, and the leaves of black or colored grapes become bright colored prematurely, the high color being followed by drying of the leaf, first between the veins and midribs.

A good sulphuring arrangement can be cheaply made by a tinner. Make it like a big pepper box with the handle opposite the perforated end. Have the handle made like those on the cup lid of a milk can. Have one end so it may be opened to fill with sulphur. As you walk by a vine, hold it among the branches and give it a chug which will sift the stuff out. This is an easy arrangement to handle and is compact and durable.

It is a good idea to sift the sulphur on the main branches and also on the ground beneath the branches. One application after the bloom drops and again when the berries are about the size of sweet pea seed.

* * *

FERTILIZERS FOR GRAPES.

Editor Cultivator:—Will you please tell me what fertilizer to use for a vineyard in this locality and where can they be had? Also has the experiment station published a bulletin on the analysis of fertilizers?

Subscriber, Kingsburg.

No one can tell you what fertilizer to use on your vineyard unless he has experimented on the particular vineyard which you wish to fertilize. You cannot make a mistake by using stable manure, but when it comes to using commercial fertilizer, the kind and quality which it would be economical to use cannot be determined except by trial.

Bulletins on commercial fertilizers are issued at the experiment station at Berkeley at intervals. You may get them by mailing a postal card to the director.

* * *

FUNGUS ON APRICOT TREES

Editor Cultivator: Enclosed please find a few branches of my apricot trees that are affected with a kind of blight. Is it chlorosis or something else and is there a remedy for it that will cure it now? It has been getting worse each year.—H. H., Orange.

The leaves have been attacked at the time that the buds opened and have made but little growth. There is nothing that will save those leaves; but spraying with Bordeaux mixture now will help to hold it in check another season. Spraying in the winter time will help to eradicate it. One application late in the winter and a summer r spring application in case the disease begins to show up will no doubt bring the trees out all right. We cannot tell you the name of the disease, but it is evidently a fungus of some sort. Prof. R. E· Smith of Whittier can give you this information and may suggest a better method of treatment.

* * *

TARRED ROPE FOR APPLE TREES.

Editor Cultivator: I notice in the Cultivator of the 27th issue that the apple growers of Pajaro valley are using tarred ropes about their trees. I would like to know if ropes have to be tarred each season and at intervals during the season. What size ropes are used?—Subscriber, Santa Barbara.

Will some of our Pajaro valley subscribers please drop us a line and tell us about this? We know just enough about this not to be on the safe side when it comes to advising. We will appreciate the favor.

* * *

PARIS GREEN AND BUGS.

Editor Cultivator: How strong a solution of Paris green should be used on plants?

How can I exterminate snails in the garden, also a green bug that resembles lady bugs?—Mrs. L. D., Wilmington·

Paris green should be used 1 pound to 200 gallons of water. If it is mixed with about a quart of ammonia to a pound it will be rendered soluble and will be evenly distributed, will not require stirring. It will, however, be in a condition that wll allow it to be washed off with a shower of rain. The ammonia should be mixed with the Paris green before adding the water.

Mix up a paste of cornmeal and white arsenic and place it under a box in the garden. The snails will soon get the run of it and no doubt when a few get the stuff those that are left will come and eat them and thus they will pass it along. If you do not care to use arsenic, use the meal alone and when they get the run of it, go out about 10 or 11 p. m., and gather them up. Snails and slugs make good chicken feed if not mixed with arsenic.

The green bug is no doubt the diabrotica and insect powder is a good remedy for it.

* * *

FIELD MICE.

Editor Cultivator: Will you please inform me through your paper the best remedy to get rid of field mice in the celery patch as they do considerable damage every season, especially when the celery is stored away for winter in the pits.—G. M., Grand Rapids.

Cultivate owls and hawks. They will clean out the mice quicker tnd cheaper than any other agency. An occasional very light dose of cyanide in the form of a fumigation will fix the mice in the bins. It will have the disadvantage of leaving them in there dead and bad odors will remain for a while·

When a rich man does something to really benefit agriculture, let us all honor the act. Here's J. J. Hill offering $34,000 in cash prizes for best farming in the Dakotas and Minnesota! The Hill prizes are to be awarded by Orange Judd Farmer of Chicago.—Farm and Home.

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For profit. We are prepared to purchase the fruit and, in fact, all kinds of small fruits, even if too ripe for other uses. If you have

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Of Interest to **Fruit Growers**

Sometimes it pays to take the first market. Sometimes it pays to wait until your fruit is dried. I will furnish free to all producers of Dried Fruits a compilation of the stocks of Dried Fruit in all the largest cities in Europe and the United States. After seeing this report you will know when to sell and at what price. My estimates were correct in 1904, when prunes sold at 1 3-8 bag basis. I estimate apricot and peach prices. Contracts made by or through me will be safe. I never have had a draft rejected or unpaid. Reference: American National Bank, and Bank of California, San Francisco.

F. W. Dieckmann

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Practical Farm Science

BY PROF. A. J. COOK

THE QUEEN BEE.

The successful dairyman must have good dairy stock in his herd if he would reach the top rung in the ladder of success. The farmer of the rich Illinois prairies who produces corn finds that pedigree corn for seed adds immensely to his profits. In like way, the one who is to touch the top in successful honey production must have the best bees. Every observing beekeeper is aware that some colonies of bees are far more profitable than are others. In the economy of the hive, everything hinges on the queen. She is mother to all the workers. She, not only gauges the population of the colony, but she gives character to the work of the colony in its entirety. The wise, progressive beekeeper will, therefore, look well to the quality of his queens. Every well informed beekeeper will know his best queens by actual test of honey production, and will take all pains as far as possible to secure his young queens each year from these best tested queens. The cow with a famous record is no more important in the dairy, than is the queen with a startling show of profits, in the apiary. By the exercise of judicious care, the beekeeper can be sure that all his young queens are from his best old queens and, by taking great pains, he can often be pretty sure that they are as well mated. One reason why many of our best beekeepers, who stand out so prominently in records of profit, have reached such high success, is that they are most cautious in breeding their queens. It will pay every beekeeper to secure from these old experienced apiarists, occasional queens bred from their very best. Indeed, such well known apiarists as Doolittle, Miller, Taylor, etc., are not slow to secure such additions to their breeding stock, even though they are very careful in their own breeding.

* * *

BEET CULTURE IN GERMANY

Magdeburg, only two hours from Berlin by rail, is in the center of the beet production and sugar manufacture of all Germany. Mr. Frank S. Hannah, our American consul at Magdeburg, has paid not a little attention to beet culture as practiced in that section. Mr. Ernst Grotkass is a beetgrower at Magdeburg and one of the best informed men in Germany in regard to beet growing and production. Mr. Grotkass, though a native of Germany, was for ten years a citizen of the United States, where he became naturalized. Though he is now again in his native country, he claims with pride his American citizenship. From Messrs. Hannah and Grotkass, I have been able to learn much regarding beet production, in this section, that must be of considerable interest to growers in America. There are two points that should ever be kept in view by beet growers: they should not only work for the maximum quantity of beets to the acre, but they are equally interested that their beets should give the maximum sugar content as well. From Mr. Grotkass' long residence in the United States and his later frequent visits there, his views and suggestions are peculiarly timely, and worth attentive consideration. He claims that great pains should be taken to secure the best seed. This, as all agree, is at present produced in Germany. Indeed, a large part of the seed sent to America is produced in the near vicinity of Magdeburg. Exceeding pains is taken in the breeding and growing of this seed. Mr. Grotkass is insistent that American growers should not trust to others to secure their seed but should see to it themselves, and should combine that they might get the best at the cheapest rate. He says at the present time, many are paying at least twice as much as they ought to for their seed. He also is very emphatic in the opinion that the American growers are using far too little seed. He says that from twenty-five to thirty-five pounds per acre is not too much, though often in America, not more than one-third of this amount is used. In Germany the grower feels that there must be no vacancies in the rows. He says the amount of vacant space that he saw in America would be looked upon here as ruinous. The land should be thoroughly plowed in autumn and must always be kept carefully cultivated and the grower should practice such rotation as would make his land in the highest degree weed free. The thorough cultivation is not only to eliminate weeds but also to keep the soil pervious to air at all times. I am told that the cultivation in Germany is far in advance of that generally practiced in the United States. I judge from what I learn here that the beet fields generally are as free from weeds, in Germany, as are our best cultivated orchards in Southern California. Timely thinning is also looked after with great promptitude. Germany is also very liberal with stable manure and commercial fertilizers. America will more and more come to the same practice. So far as I can learn, green manuring is very little practiced in Germany.

It is considered by German beet growers exceedingly important that the ground be thoroughly and deeply plowed in autumn. Mr. Grotkass is surprised that this work of plowing is left till spring in many of the beet fields in America. It is to be hoped that our American beet growers will observe all these points so that they may equal the proud record of Germany the past year of twenty tons per acre with a twenty per cent of sugar content. Mr. Grotkass tells me that he believes California has superior climatic conditions for producing wonderful crops of beets with the highest percentage of sugar.

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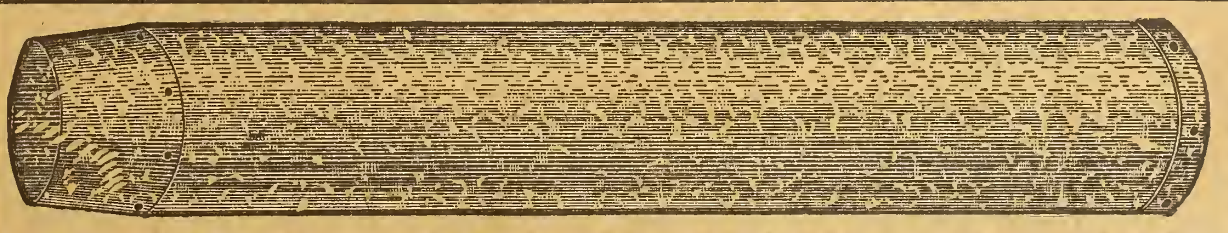

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California Horticulturally

SERIOUS GRAPE PEST IN THE EAST.

During the reign of George the Third it was decided to appoint a day for thanksgiving. The year had been an unpropitious one in every way; ill success had attended the British arms abroad, crops had failed at home; business was in a state of depression, and everything seemed to have gone wrong to the bow-wows. When the king was asked what there was to give thanks for, he thought a moment, and then replied, "Let us thank God that it is no worse!" When our California orchardists think only of the evils in various insect pests and fungus and other diseases which attack their trees and which require constant warfare, they are apt to think their lot a hard one, but when they look abroad and see how many ills they escape they can very readily agree with King George and return thanks that things are no worse. There are innumerable ills which the fruit growers in the East have to contend against which we in California know nothing of. Just think of the Plum Curculio in our prune orchards and our cherry orchards, of the peach yellows and rosette in our peach orchards; of the fruit flies in all of our fruits, and of a hundred and one others which we have not got, and it will appear as though we are not troubled with insect pests at all. In some sections of the East there is a curculio, one of the little snout beetles, which attacks the grapes, and the only way in which they can be saved is by tying up the bunches before the grapes are half formed in paper bags. If this is not done there will be no grapes. Just think what would happen to our raisin crop if we could not grow them without tying each bundle in a bag. Really, we have no serious pests here, and with watchfulness of our county horticultural commissioners, there is little danger of their introduction.

* * *

A CURE FOR PEAR SCAB.

Many of the pear orchards in Northern California, which have escaped the pear blight, have suffered severely from pear scab and cracking. Wm. Booth, a prominent pear grower on the Cosumnes River, in Sacramento County, has been a great sufferer from this cause and has not harvested a crop of marketable pears from his orchard in the past five years. This year, and to use his own words, he determined to cure the scab or kill the trees, and to this end while the trees were still dormant he prepared a wash on the principles of the Bordeaux, but much stronger, dissolving all the sulphate of copper (bluestone) the water would carry, practically, he states, 30 pounds to the 100 gallons of water, to this he added 20 pounds of lime. The bluestone was added to the water first and the lime slacked in the bluestone water. With this he sprayed all but twelve of his trees, leaving them as a check. The result is that every tree sprayed is loaded with perfect fruit, while the twelve left have light crops of badly scabbed fruit. Mr. Booth states that he will have a very large crop of good pears this year, the first in years, and he ascribes it to the extraordinary strength of his application.

* * *

PEACH CURL LEAF.

Peach curl leaf has appeared in some of the peach orchards and is doing much damage. Very many inquiries are made as to how to cure this disease. It may be stated that the disease may be prevented but cannot be cured. When the curl leaf shows itself on the foliage that is the end of it for that season. The damage is done and it cannot be cured. The diseased leaf will drop off and another crop will put out, at the expense of the strength of the tree, which is weakened by every drain made upon it in this way. Curl leaf is a fungoid disease; it comes from spores shed from the previous season's crop and which remain on the twigs and branches of the tree until favorable conditions cause them to germinate in the spring, when they break forth with a new crop, much to the detriment of their host plant. To check this disease it is necessary to use something which will kill these spores before they have time to germinate, and the best thing so far known is the Bordeaux mixture. This should be used full strength while the trees are dormant, and it should be seen that every part of the tree is reached. Salt, sulphur and lime has also been found excellent as a preventive.

* * *

BENEFICIAL INSECTS IN SACRAMENTO.

Owing to the wreckage of the insectary of the Horticultural Commission, caused by the earthquake in San Francisco, and the fact that the Ferry Building in which it was located, is being repaired and is practically untenantable at the present time, it has been determined to remove the insectary to Sacramento, and to breed the beneficial insects at that point. To this end a temporary structure is now being erected, which will be used until a permanent and durable building can be had. The work of caring for and distributing the parasites will be in charge of E. K. Carnes, who has had the care of them in San Francisco, and who will remove to Sacramento.

* * *

INVESTIGATING OUR METHOD

New Zealand is nothing if not up-to-date, or a little in advance of it. She has copied California methods extensively in her horticultural work, has some excellent horticultural laws, and first class agricultural department, and, horticulturally, is in the front rank. Since the introduction of the parasite for the codling moth, from which we hope so much, New Zealand has watched it very closely, as she too has the codling moth, and in order to be thoroughly and officially informed as to the probability of the success of that insect, she has sent a special agent, W. A. Boucher, the Government Pomologist, to California to investigate and report. Mr. Goucher, while here, will carry on an investigation in other lines of interest in relation to Calfornia methods in fruit growing, etc.

* * *

EFFECTIVE SPRAY FOR PEACH BLIGHT.

We have advocated early spraying with Bordeaux mixture for the peach blight, which is a fungus growth and not similar to the pear blight, and we are pleased to note the statement of a correspondent of the Madera Times giving his experience in this matter. The writer is G. L. Hawley, and he says: "The trouble has long been serious in these parts, and it is very reassuring to know that there is a remedy. We have a practical demonstration before our eyes on the Midvale Land Co.'s orchard. The north side of the road was sprayed and the south side was not. On the north side there is little or no blight and a good crop of fruit is promised, while on the south side the blight is bad, and here will be very little fruit. This shows conclusively that the spray was a success in every way."

FIGHT THE MOTH.

Codlin worms are beginning to hatch out in the packing houses in all apple growing districts, and orchardists will soon be called upon to battle valiantly against this pest, which will be attacking their trees.

A safe and positive method of conquering the codlin worm has been found in the arsenate of lead spray, and all of our fruit growers should apply the remedy according to the direction of the university specialists. In test orchards last season the remedy proved entirely satisfactory and it can be used to advantage by all orchardists.

There should be more summer spraying this year than ever before. We will have the codlin moth with us in numbers, wherever apples are grown, and it remains to be seen whether man is going to let an insect outdo him. We are liable to have a large apple crop, in nearly all sections, and we should strive to place it on the markets of the world in first-class shape. In order to do this orchardists must spray intelligently.

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With the Citrus Growers

BY J. W. MILLS

A NOVEL METHOD OF WRAPPING.

Last fall we noticed a young orange grove in Redlands that was being wrapped with sorghum stalks, the sorghum having been planted in a circle around the trees in June or July. It was allowed to remain thus until the cold weather was due when it was simply drawn close around the tops of the young trees and tied with a string. It seemed to work well as no staking was required and the trees came out in fine condition this spring. The sorghum roots no doubt make it necessary to give a little more water, but the irrigation of an orchard during the first summer is not a serious nor expensive job.

* * *

SETTING OF ORANGES.

As usual we hear complaints of oranges dropping and prospects of light crops. We would be surprised if we did not hear this. We hear it every year. Growers will complain of oranges dropping and then before picking season comes around they will have to prop the branches to keep them from breaking from the weight of the fruit. These conditions do not always prevail of course. Some growers have suffered considerably during the past year from dropping of the young oranges. It takes an experienced grower to know if too many oranges are dropping, and even he is sometimes deceived. The difficulty with estimating a crop before August is that the oranges are so small and being the same color as the leaves, only a small percentage of them can be seen unless a close inspection is made, and even then a great many are overlooked.

The drop that comes at the time of the July growth seems to be the most serious. The oranges are then about the size of half-grown walnuts and it sometimes appears as though they will all drop off. It is hard to give a plausible explanation of the cause of the dropping of young oranges. The drop that comes immediately after the blooming period seems to be natural. Should all the blooms set fruit, or even half of them, the trees could not bring the fruit half way to maturity. Writers on the subject have advanced the theory that the seedlessness of the Navel orange renders it weaker than it would be had it seeds. This theory is not backed by experience. The Mediterranean Sweet is a notoriously free bloomer and is usually a shy bearer. There has been a general budding over of Mediterranean Sweets to Navels and Valencias, not because they do not bring good prices, but because they usuallv do not bear as well as these varieties. It has been our observation that certain locations in certain sections are admirably adapted to the Mediterranean Sweet, and in such places they pay better than Navels.

It would appear that a large percentage of the blooms never were intended to produce fruit. In other words their whole office seems to be fulfilled when they produce flowers. The climatic conditions have considerable bearing, for an orchard will sometimes have a series of light crops and then a series of heavy crops. Some advance the theory that cutting the roots by plowing when the trees are in bloom or the fruit is at the "setting period" causes the drop. This is not the whole thing, as we have plowed at such times when large numbers of roots were plowed up and still the trees produced heavy crops. We have read that root pruning will encourage a good setting of fruits of certain varieties, so this objection is not founded on physological facts. It is very safe to assume that if the general vitality of the tree is kept up and uniform conditions be made to prevail the dropping of the fruit beyond a serious point will be stopped. Stimulants may bridge over the critical period but when other requirements are too far out of line these will no doubt fail. Climatic conditions no doubt play an important part, but it is hard to judge even those. On the third of April one of the severest hail storms known in Riverside pelted the orange trees for an hour. The trees were just in bloom and the outside leaves of some of the thrifty growing orchards were torn into strips. Those trees are now loaded with perfect little oranges.

LEMON TROUBLES.

Editor Cultivator:—I have five acres of ten year old lemons. Several of them have some disease which I can get no information as to the cause or cure. It is generally confined to a few limbs and in one or two cases to the entire side of the tree. The foliage is badly mottled and mostly consists of short stubby suckers, what fruit sets is pear shaped and never gets the proper size, while the balance of the tree is filled with fine fruit. I recently dug up a tree that was more affected than the others, thinking the trouble might be with the roots. The only thing I could see was a rather scanty supply of small fiberous roots. All the large ones look in good condition. Two years ago I budded two trees to naval oranges. The buds on the affected side never made much growth, look spindling and sickly, while the rest of them look fine and produced some fruit. The grove had been well watered and fertilized with both stable manure and commercial. Last spring I applied nitrate of soda on the effected side, the only result was that during the growing season the mottled appearance was not quite so pronounced. I should be pleased to receive any information as to the cause; also the cure if any is known.—Subscriber, Bloomington.

This is a condition that is becoming quite common and it is for just such complaints that the Pathological Station is to be established. We cannot tell you what to do for your trees. The laboratory for the Pathological Station is now in operation at Whittier and is in charge of Prof. Ralph E. Smith. Prof. Smith is anxious to locate all orchards or plantations of any sort which have trouble in the nature of diseases, and if you will correspond with him, he can do more for you than any person whom we know of.

Madge—It must be dreadfully hard to marry for money.

Dolly—Indeed, it is, dear. All the rich fellows seem to be snapped up.—Harper's Bazar.

FRUIT PROSPECTS.

Fruit prospects in the Sacramento and San Joaquin valleys are given a cheerful boost by Manager G. B. Katzenstein of the Earl Fruit Company in an interview last week, while admitting it was early to form anything like a correct estimate, his views would not cause a fear of light crops. Grapes ought to be a record-breaker as the vines never looked more promising. Cherries are going forward and bringing good prices. "Of course," said Mr. Kttzenstein, "there are some varieties of fruits that will be short. This is always the case. The peach crop may be light in one part of the State and heavy in another. This applies to peachs, apricots, plums, etc., but, taking the situation generally, I think growers at this time have reason to look forward to good crops and good returns."

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The Ornamental Garden

BY ERNEST BRAUNTON, LOS ANGELES, CAL.

WATER FOR SICKLY PLANTS

It has been shown by careful experiment that sickly potted plants can be greatly benefited, and somtimes entirely restored to vigor by applying warm instead of cold water. In some cases, plants which have never bloomed, or which have done so but imperfectly, after being treated with warm water, produced a most magnificent luxuriance of bloom. Water may be applied about 110 degrees F., and gradually increased each watering to a temperature of 150 degrees F.

THE BLUE PALM.

Erythea armata, the blue palm from Lower California, forms a striking contrast to the dark green of the date palm. In young plants the blue or glaucus "bloom" is very noticeable, and if growing in the full sun, and with a well drained soil, it will always maintain this pleasing shade. In its native habitat it is said to grow to forty feet but in cultivation it would certainly not attain such a height under several centuries.

ARCTOTIS

One of the most valuable introductions of late years is an annual for florists' or garden use, Arctotis grandis, and grown in California quite extensively. It hails from South Africa, where about twenty species are found, of which our subject is the showiest and most valuable for all purposes. How extensively it is grown we have not heard, but the few the writer has seen created a very favorable impression both with the florists and gardeners. Every lover of flowering annuals should give this plant a trial this spring.

OUR WILD FLOWERS.

Now is the season for locating wild flowers with a view to later work of gathering seeds, bulbs, or digging up shrubs. This is a work to which more attention should be paid in every county in California. Our natives look better, thrive better, and get along with the least care, of any vegetation ever grown; therefore, on the score of economy alone, it pays to grow them, and they really are as showy as anything the nurseryman has for sale. Plant some native plants this year. Next year you will certainly increase your collection.

A GOOD PALM.

Erythea edulis, the Guadalupe fan palm, is a much more desirable palm than Washingtonia filifera for small places. It does not shed its leaves annually as does the Washingtonia; they remain green and beautiful for years. Strictly speaking, Washingtonias, our native palms, do not shed their leaves, but they die and drop down along the trunk which give a tree 50 to 75 feet high a dead appearance except for the tuft of leaves at the top. Erythea seeds are round, fully an inch in diameter, and require 18 months' time to germinate.

SO-CALLED IVIES.

Senecio macroglossus is a vine that has been in bloom in the open the entire winter in Southern California. Its beautiful light yellow, star-shaped flowers, borne in profusion, make it very much darker in color and not so large as that of German ivy, Senecio mikanioides, but for a basket plant or covering arbors it is very much more effective because of its profuse blooming character.

THE ASPEN.

Populus tremuloides, the common aspen or popple, is the commonest of the American poplars, and it ranges from Labrador to Kentucky, New Mexico and California. It is the species which springs up in recent clearings throughout a large part of the Eastern States. In aspect it is much like the European Aspen (P. Tremula), but the leaves lack entirely the deep teeth of that species and they are green on the under side. The catkins are also smaller, and there are other botanical differences. There are no horticultural varieties of this species, but the plant is worthy attention from planters.

A FINE SHRUB.

A beautiful white flowering shrub, Acokanthera spectabilis, has proved its worth for California by its great profusion of bloom during the past season. The flowers are about the size of those of a white bouvardia, borne in umbels in the axil of every leaf. The fruits, which ripen during the winter months, are the size and color of those of the purple leaved plum, containing a milky acrid juice exceedingly unpleasant to the taste. An evergreen, it is very ornamental whether in fruit or flower. A native of South Africa, it is perfectly adapted to our dry climate, and will be in every collection of shrubs in California when its merits become known.

WINDOW BOXES

Window box, porch and veranda gardening, it would seem at present is within the threshold of a successful era in this country, and it seems strange that this effective and comparatively inexpensive method of beautifying houses, especially in cities, has not been long ago more universally adopted and advanced, considering the long standing of this art of gardening in European cities, which are annually visited by thousands of American tourists.

It may truly be said of most of our attractive cities that the creation and development of park systems all over the country has had a very far reaching and beneficial influence upon the beautifying of home grounds through the residential districts of these cities, and it is quite natural that it should be so. Indeed, it would be a strange, unresponsive, cold people that would not take the lesson so easily learned and within the reach of all; and the very fact that the lessons given have been so fruitful, bringing additional happiness and attractiveness to so many homes, should lead us on to further efforts to extend the cultivation of flowers at all seasons of the year at the homes of all.

The fact that the wind will blow the seeds of grass, of a shrub or even of a tree into the smallest crevice of a stone pavement, a stone wall or any almost inconceivable space, often too small to be noticed by the superficial eye, and that said seed will germinate, produce a plant which will live its term, should teach us that there is hardly a space or location which will refuse all conditions necessary to plant life, but that, on the contrary, with the help of painstaking care, adverse conditions can be overcome and plant life can be introduced and maintained everywhere where bareness otherwise rules supreme.

LAWN FERTILIZERS.

Since the lawn is a permanent feature, it is hardly possible to make the soil for the reception of the lawn too rich. Stable manure which has been thoroughly composted and rotted and which is as free as possible from detrimental weed seeds is undoubtedly the best material to use in producing the desired fertility of the soil. Forty to sixty loads of well-decomposed stable manure are not too much to use upon an acre of land designed for the greensward. Where such stable manure is not available the next best plan to follow is that so often sug-crops, such as vetches, Canadian peas, beans, and similar plants. The land should then receive an application of about 1000 pounds of lime to the acre, and at the time of preparing the seed bed 500 to 1000 pounds of fine-ground bone, together with 300 to 500 pounds of a high-grade fertilizer upon each acre. The fertilizer may contain 3 per cent nitrogen, 6 to 8 per cent phosphoric acid, and about 8 per cent potash.

LAWN GRASSES.

Lawns in which Bermuda grass has gained an entrance and largely crowded out blue grass present a very unsightly appearance after frosts have occurred, the bluegrass remaining bright and green while the Bermuda grass, after having been frosted, turns light brown, thus presenting a very spotted and unattractive appearance. Under these conditions the Bermuda grass becomes a weed, and when your lawn becomes thus filled you have left but the choice a lawn of "weeds," or the making of a new one; the latter you will eventually do unless you altogether abandon the idea of keeping a lawn.

HORTICULTURAL HERESY.

Some Yankee nurseryman, 'tis said,
  Claims to have scored a floral coup.
For he succesfully has "bred"
  A rose indubitably blue!
Which, like the short-lived "green carnation,"
Will cause, he hopes, a wide sensation!

But we, for our part, cannot be
  Approvers of the skill he's shown;
Confound that nurseryman! say we,
  Why can't he leave the rose alone?
Blue rose, forsooth! Why not black lily,
Or something even still more silly?

For in the end this meddling crank,
  Resolved his cleverness to show,
May outrage Nature by a prank
  Past which e'en he can't hope to go
Yes, he may stagger us, the varlet!
With a violet of vivid scarlet!

—Truth.

No, the roses soon wither'd that hung o'er the wave,
  But some blossoms were gather'd while freshly they shone,
And a dew was distill'd from their flowers that gave
  All the fragrance of summer when summer was gone.

—Thomas Moore.

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In the Vegetable Garden

BY ERNEST BRAUNTON

PLANT-BEDS.

Plant-beds are very largely employed in this State for raising seedlings. A cold-frame will serve the purpose of a plant-bed for raising seedlings, and has many advantages. Seedlings, after growing to a size that are easily handled are often planted in a bed for further manuring; this is especially so when large quantities of tomato, cabbage or celery plants are wanted. The advantage of having these plants in as small a space as practicable is apparent to all. The plant-bed must be very fertile, and have plenty of water to be used in case of need. The ground should be raked carefully, the fertilizer applied, and the bed spaded or plowed, and then raked again. The bed should lie a week or ten days, to allow the fertilizer to be incorporated, when the plants may be set out. Plants should not be allowed to become checked in their growth at any time. It does plants good to be planted several times, and with some vegetables such frequent planting is profitable; but for plants to come to a standstill for want of water or fertilizer works a detriment that is strikingly noticeable in the crop. Hence in the transplantings great care should be taken as to moisture, temperature and soil, so that growth may not be checked.

DWARF LIMA BEANS.

Beans of the dwarf Lima type have attracted much attention during the past few years, but there appears to be considerable confusion as to their merits and little positive knowledge of their botanical features.

In the first place it should be said that the dwarf Lima beans constitute a comparatively new type of garden vegetables. They have all appeared in public within the last score of years, and they are apparently nearly unknown in other countries, except as introductions from North America. Seedsmen and horticulturists often remark that when any very decided variety of plants is introduced, other varieties of the same general type are likely to at once appear, and this fact will undoubtedly account for our having several apparently new varieties introduced about the same time. These have of late years been "weeded" until those now grown are all of the best, so that no serious danger results from buying any seed generally offered for sale in the bean districts of California.

MANURING AND FERTILIZING

There is no one thing upon which the success of a truck garden so much depends as upon manures. They must be applied in quantities that would appear excessive to one engaged in any other branch of agriculture. The different vegetables require plant food in varying proportions, and a fertilizer suited to one may not contain the essential ingredents (ammonia, phosphoric acid and potash) in the proper proportion for another, and it is economy to have special mixtures for the particular vegetables grown. Peas and beans, for instance, require 3 per cent of ammonia and 7 per cent each of phosphoric acid and potash. Ammonia, phosphoric acid and potash occur in different soils in varying proportions and the fertilizer formula must be so modified as to correct the excess of deficiency, as may be indicated by experience. While for general gardening purposes stable and barnyard manures have no superiors, few gardeners are so situated that they can procure it in quantities to suit their needs. Such manures should be piled in a compact mass and occasionally turned over and well mixed that slow fermentation may be kept up. Chopping down the heap vertically will reduce the manure to a better condition for use by the plant and at the same time facilitate its distribution in the field. Where land is abundant or the supply of stable manure inadequate, green manuring and commercial fertilizers must be used to make up the deficiency. With an abundance of stable manure the separate fertilizing ingredients are frequently more profitablly used with the manure than either alone, no matter how heavy the application may be. Under some circumstances and for certain crops it will be found that commercial fertilizers give better results and are more satisfactory than stable or cow manure. Until the soil has become well filled with vegetable matter there is no better or more economical way of rapidly increasing and at the same time balancing its fertility than by using crops of peas or vetches for green manuring in connection with applications of phosphoric acid and potash.

Whether fertilizing materials are applied broadcast, in the drill, or in the hill they should be well incorporated with the soil before planting by the use of the harrow, plow or hoe. Unfermented manures should not be applied immediately before planting, but either composted or spread over the ground some time before it is to be occupied by the crop, otherwise it may affect the crop disastrously.

Soils need rotation of manures as well as of crops. A plot of land that has received continuous and heavy applications of stable manure will give greatly increased yields if commercial fertilizers are given it, with or without the continuance of the stable manure. On the other hand, the addition of stable manure will also greatly increase the yield when applied after continuous use of commercial fertilizers.

EARLY CUCUMBERS.

This has become one of the leading vegetables for the winter and early spring. It stands shipping to distant markets remarkably well. In that portion of California where there are frosts the seedlings should be started in a cold-frame or in a hot-bed. This seems like very remarkable advice to those who have tried to transplant them, but it is easy enough when you know how. For every acre that is to be planted procure twelve hundred two-inch paper flower pots; the same number of four-inch, and, if very early cukes are wanted, the same number of six-inch. Use only the best seed, and plant them four in each pot. These pots should be filled to within a half inch of the top with good potting soil; it is planted six weeks earlier than the last frost usually occurs, if it is intended to use only the two smaller sized pots; but about nine weeks if the three sizes are to be used. The cost of the pots in the former case will be less than nine dollars; in the latter about twenty-five dollars. There is no doubt but that one could obtain a large discount on these pots, if a large quantity were to be bought at one time. If these pots are not sunk into the sand they will stand for two crops. During their growth the plants should be examined frequently to see that they do not become pot-bound. They should be shifted to a larger pot as soon as the soil is permeated by the roots. This may be tested by removing the soil from one of the pots which may be done easily as follows: Hold a pot upside down, press on the bottom, this will loosen the soil, the condition of the roots can now be examined without difficulty. As soon as the roots have taken up most of the space in the pot shift the plant to a larger one.

The plants should not be transferred to the field until two weeks after danger from frost; if the spring is cold and backward it is better to keep the plants under the protecting cloth. This method seems to be rather expensive, but it avoids all danger from frosts, and if the six-inch pots are used the plants will be too far advanced to be hurt by the cucumber aphis. Much useless working of land is also avoided. On the other hand it requires skill and experience to prepare the potting soil properly, also care in handling the plant bed. The amount of work will be found to be less than when they are planted directly in the ground.

GARDEN BEETS.

There are many very valuable varieties of garden beets at present. The best ones to grow will depend upon the fancy of the market as to color, size, shape, etc. The ground cannot be too rich, nor too thoroughly pulverized. The roots generally bring the best prices early in the season, and it often happens that it pays better to harvest the crop when half grown, than to wait until fully matured. Like many other vegetables, they may be had continually by sowing in succession from two to three weeks apart. Always press the soil closely to the seed when planted, or in a dry time the seed will not germinate. The ground occupied by the early crop is always used for a second one after they are marketed. The majority of gardeners sow more seed than is necessary, and then thin out, leaving the desired number of plants to mature, using those thinned out as a substitute for spinach.

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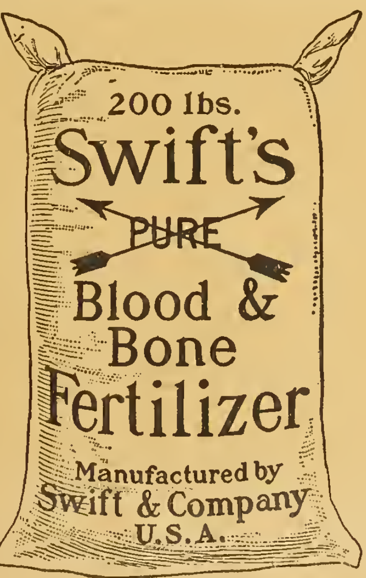

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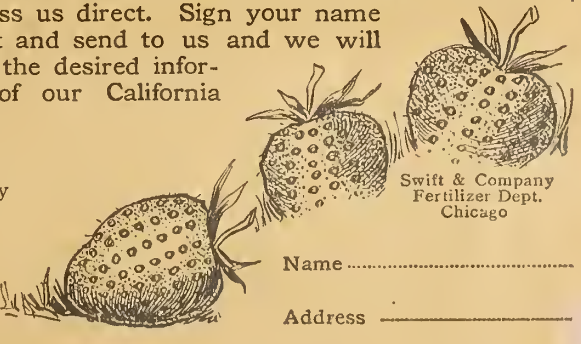

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H. A. PERKINS, ASSOCIATE EDITOR
AND ADVERTISING MANAGER

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When ordering a change in address, subscribers should be sure to give their former as well as their present address, in order to insure desired change.

Date on wrapper or on address slip shows time paid to, thus: John Smith, 1-05, means subscription is paid to January, 1905.

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Friday, May 18, 1906

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The Free Seed Evil.—Though the Committee on Agricultural Appropriations reported against the continuance of free seed distribution, the House, by a vote of 153 to 82 decided to continue the evil.

Though there are many classes to be considered, the interest of the Cultivator centers, primarily, in the farmer. The farmer needs no seed favors from the government. What they need is further extension of rural delivery, and such other accomodations as will enable them to do business in an expeditious and economic manner. All an honest farmer wants is a "square deal," the right to ship his produce to market at reasonable rates, an equitable tax rate, and a few such necessary concessions from the government. He will then be prosperous enough to buy all the seeds he wishes, which would far exceed his purchases under present conditions.

Farmers when considering the situation in a sober, candid way would have no occasion to regret the discontinuance of seed for which he had little use and in which he had no choice. This "free seed graft" has always been worked to the limit and usually with unsatisfactory results so far as crops were concerned. Reports from thousands of farmers show that often the seeds would not grow and very rarely was a maximum yield obtained. A majority reported that they would much prefer to purchase what they need in the way of seeds. Furthermore this measure, like so many "free" government conditions, is generally worked as an odious political graft.

Great injustice has also been done to the seed and nursery trade by interference with an honest and progressive class of tradesmen and growers. While there should not be any friction between the trades and the Agricultural Department, the members of the seed and nursery trades owe it to themselves to have this uncalled for embargo on their industries removed or at least so modified that it will not redound to their harm. Did the measure in any way aid the Agricultural Department, not a voice would be raised against it, but this Department has to keep a corps of workers on hand to distribute these seeds, merely to help the political "pull" of some aspirant for office. The American Association of Nurserymen, and the seed trade in general, are waging an unrelenting warfare against this evil and it is earnestly to be hoped that success will crown their efforts.

* * *

The New Farm House.—The "good old fashioned farm house" has passed away and in its stead has come a modern dwelling more fitted to the needs of the present, and perhaps future generations. We look back with something akin to reverence upon the charming, restful, and altogether delightful old farm house of the simpler type; yet with all the sentiments which surrounds it no one in this progressive day would be willing to return to it. The modern house is adapted to modern needs and is much more habitable than the old style ever was or could be. Nevertheless, with the new house has come the need of more and better things for the interior, more conveniences, furniture, and utensils, while out-of-doors the gardeners art has been called into play to embellish the grounds to suit the more pretentious architecture. We often wonder whether this development of the rural home is towards the "simple life" of Wagner or the "strenuous life" of Roosevelt.

* * *

Parcels Post for the Farmer.—In spite of the strong fight put up by the opposition, the will of the majority must finally prevail in the matter of inaugurating parcels post. This measure means much to all farmers but to none is it fraught with more importance than to those in the rural and fruit growing districts of California.

Much has been said and written on the subject, with schedules and tables to show just what may be done, but to strip the matter of all technicalities, parcels post is a name given to a proposed postal provision whereby small and medium parcels of merchandise may be sent by mail at reasonable cost.

The proposed measure is fought by express companies and the merchants of the smaller towns, but will be heartily welcomed by the farmer and farmer's wife. The express companies want to monoplize the business of carrying packages of all kinds and sizes The country town merchant fears that the farmer will find it advantageous to buy his goods at the big department stores of the city and such others as make a specialty of the mail order business. These goods could be sent by parcels post and delivered by the rural mail carrier right to the farmer' door, saving himself or his good wife the necessity of a trip "to the store."

For nearly twenty years agitation on this question has been going steadily on, each year gaining in the number and enthusiasm of its advocates, until now the proposed measure seems assured of success. One after another of the farmer's organizations have taken it up until at the present time they are a unit in demanding its adoption. Nearly every country but ours has a satisfactory parcels post system of untold benefit to the small farmer, while it places life's necessities and luxuries within easier reach of all who dwell in rural districts.

* * *

Deciduous Fruit Outlook.—The outlook for the coming crop of deciduous fruit, is on the whole, a very promising one for California. Apricots seemed to have suffered severely in some sections from early frosts, especially north of the Tchachepi, less severely in Ventura county and scarcely none farther south. In the principal apricot districts, however, the crop will be a light one.

Peaches have been damaged in but few sections and in nearly all localities the crop will be heavy. In places the peach leaf curl has been very bad and one heavily planted district reports that all but the Muir are affected, the crop very short and that prices will be correspondingly high. In many other districts the caterpillars are denuding the trees of foliage and while this will have some bearing on the total, the ravages seemed confined almost to parts of two or three counties. In places the new blight has been serious.

In all parts of the State prunes seem to be a heavy crop, the great Santa Clara valley reporting that prospects are unusually fine. Reports of serious damage from caterpillars are coming in from farther north, showing that these pests are unusually abundant this spring and will seriously cut down the crop in the districts worst infected.

Pears will be produced in fair quantities throughout the state though the blight is quite prevalent in certain districts. The almost heroic work against this evil in some localities is expected to show the certainty of success attendant on an energetic and systematic warfare against this trouble.

Apples in some sections south of the Tehachepi are reported light, but in the heavy bearing valleys, like the Pajaro the crop promises unusually well. Watsonville reports a most unusual and well distributed setting of Newtowns and expects to turn off the largest crop ever recorded.

The outlook for grapes seems to be a flattering one in all parts and unless something unforeseen happens, the vineyardists quite generally will have good cause to rejoice.

The San Francisco disaster destroyed a great deal of canned fruit and this loss will tend to hold up prices no matter how large the crop. Reports from all sections show that we still have a hard fight against leaf curl and blight of the peach, the pear blight, the codlin moth and horned caterpillar or tussock moth of the apple. No spray has yet proved effective against the latter pest and apple growers in Central California are greatly worried over the matter. Caterpillars, while doing greatest damage to prune trees, seem to have eaten anything that came in their way. Tanglefoot fly paper and tarred strips of paper tied around the base of tree seems to be the most effective warfare yet waged.

* * *

For the Farm Boy.—The farm boys of California will be glad to know that they will have the privilege of entering exhibits in the State Fair, which opens in Sacramento on Saturday, August 25. In order to interest the boys in the fair, and at the same time interest them in rural pursuits and rural industry, the Directors of the California State Agricultural Society have decided to offer twenty cash prizes, ranging in amount from $1 up to $20, to the California school boys between 10 and 16 years of age who send to the fair the best wheat, or barley, or oats, or rye in the straw. Each boy who desires to compete must send at least four bundles four inches in diameter when tightly bound. The four bundles need not be all of one kind of grain, but may be one of one kind and three of another, or two of one kind and two of another, or one of each kind. Before shipping by freight or express, the bundles should be boxed or carefully wrapped with burlap or cloth, and along with them must be sent the name, age, photograph and postoffice address of the sender. The photographs are wanted for the society's cabinet of enterprising California boys, and from which to reproduce pictures of the prize winners for the society's next annual report.

The grain sent in will be judged by a board of competent and prominent grain growers and the money promptly sent to the winners by the officers of the society. Length and strength of straw, size and fullness of heads, and neatness of package will be taken into consideration. All intending competitors must notify the society of the fact on or before the 10th of August, so the Directors will know how much is coming in time to prepare for its proper installation, and the grain must be sent in time to reach Sacramento on or before the 20th of August. By this inducement it is hoped to get enough grain to make a splendid and striking feature of the fair, of unusual interest to visitors, and as a monument to the energy and enterprise of the school boys of California.

Address all exhibits and communications to J. A. Filcher, Secretary, Sacramento, Cal.

* * *

Great Legal Battle.—The trial of Moyer and Heywood for the murder of Governor Steunenberg at Caldwell, Idaho, is to be the occasion of one of the greatest forensic and legal battles in the history of the American bar. The authorities are trying to have the case set for June, or sooner if possible. The renowned Bourke Cockran of New York will be pitted against Judge Borah of Boise, to go down to one of the most extraordinary defeats in the annals of law and oratory. Both are orators of the most intense passion, masculine and powerful, whose every accent, glance and gesture finds its corresponding reflection in a hearer. Each has a striking personality and wide culture. It is generally believed in Idaho that Borah is twice a match for Cockran in knowledge of the law. Borah is not a prophet without honor in his own country. Cockran, looking to his plumes, will make a dramatic effort the effect of which will be splendid. Borah is bringing to judgment not only the assasins of an ex-governor of Idaho, but in the same persons also, the murderers of his beloved personal friend, Steunenberg; and this impelling force together with the dramatic setting and impressive personages will produce the mightiest and supreme struggle connected with the tragedy.

NEWS OF COUNTRY LIFE IN THE GOLDEN WEST

HORTICULTURE.

Ventura's apricot crop will be good.

The apple crop in the Pajaro Valley will be heavy.

The grape crop in Orosi Colony is promising at present.

A heavy crop of apricots is reported from the Imperial Valley.

Pajaro Valley strawberries are bringing $6 per chest in Oakland.

The oranges of Redlands for the present season are pretty much all marketed.

Grapes and deciduous fruit about Walters, Fresno County, promise a most unusual crop.

It is estimated that there is in the Pomona Valley one-fourth of all the oranges left in Southern California.

The Whittier Citrus Association offers a reward of $25 for apprehension of trespassers found in their orchards.

The apricot and almond crops of Tehama county will be light, while the peaches and prunes will be plentiful.

There will be a light apricot crop in Napa county this year, but peaches, pears and tomatoes will yield large crops.

The first car of cherries was shipped by express from Vacaville last week by members of the California Fruit Distributors.

The citrus shipments from Southern California to date have been about 18,000 cars of oranges and about 2000 cars of lemons.

Caterpillars are doing serious damage to fruits in Sonoma county and in many places have practically denuded trees of foliage.

In this State during 1905 there were over a million and a half cases of peaches canned, 624,491 cases of apricots, and 565,166 cases of pears.

A new rose farm is being established near Pomona. On a twelve-acre place, 200,000 rose bushes will be set out and grown for the Eastern market.

Orange trees have been coming into the Orosi section by the four-horse wagon load of late. There is a good orange-growing country here, and in the next few years Orosi will be noted for its production of citrus fruits.

The various packing houses of the San Antonio Fruit Exchange are rushing oranges into the market at the rate of 100 carloads a week, and this will continue for two weeks and probably three.

A dispatch from Fresno says that eight cents is being offered there for dried peaches, while canners are trying to make contracts for the green fruit at anywhere from $35 to $40 a ton.

The Clairmont Citrus Union distributed this week $19,319.82 as the second payment on its March pool. The union estimates that it has about 125 cars yet to ship. The returns for the March pool were $1.40 per 100 net to the growers.

Reports from many districts in Sonoma county, including Forestville, Sebastopol, Geyserville, Healdsburg, Dry Creek Valley and elsewhere are to the effect that caterpillars are destroying leaves on fruit trees, and are damaging all kinds of fruits.

The cherry crop of this season will be much heavier in Napa county than last year; in fact, the total output will be as much as was shipped during the season of 1903. The first car was shipped last year on April 22nd.

AGRICULTURE.

The 1906 wheat crop in Sacramento County will be light.

Lots of hay is being cut at this writing.—Exeter Sun.

This is going to be a banner year for hay in the country adjacent to Corona.

The Alhambra Farmers' Club will hold its semi-annual picnic at one of the beaches in June.

The celery crop of 1905-6 in Orange County amounted to 2276 cars; the year before it was 1799.

The California Vegetable Union shipped 15 carloads of cabbage East the past week from Orange County.

Grain crops throughout Tulare County look better at the present time than they have for a number of years.

Over 800,000 cases of tomatoes were put up last year in this State, and asparagus comes next with 228,429 cases.

In the Mound and Saticoy sections of Ventura County conditions were never more favorable for a bumper crop of beans.

The Santa Clara County Pomona Grange will meet with Orchard City Grange in an all day session May 22nd at Campbell.

There is a hopeful feeling in regard to the market for California hops. This bouyancy is a result of the bull movement in Oregon.

The farmers around Downey are getting busy with their hay crops. The outlook is fine for an extra large cutting this season.

Grain hay in Kingsburg and vicinity is ready to be cut. The yield will be quite good and the quality much better than last year.

Grain bags will be high priced this year as a result of the San Francisco fire, and sacks will be shipped from Oregon and Washington.

The rain that visited this section of the country did considerable damage to grain crops in various parts of the county.—Visalia Delta.

The melon crop in the Imperial Valley is looking very promising, and altogether the farmers down below sea level look for a very prosperous year.

It is the belief of one of the best posted men on celery in the Smeltzer section that 4000 acres will be planted this season. Last season the acreage was 3400.

The planting of lima beans throughout Ventura County is now on in earnest, and by the end of this week there will be thousands of acres of this staple article in.

The express shipments from Escondido for the past week were 201 cases eggs, 1155 pounds butter, 1240 pounds chickens, 2290 pounds cream and 3750 pounds of beans and peas.

The late rains were a great boon to farmers and orchardists in Pajaro Valley and they are taking advantage of the favorable conditions to get their soil thoroughly cultivated.

Three good showers of rain this week around Boulder Creek have been very opportune for all kinds of crops, and conditions were never more favorable than now for the farmers.

From all over the County of Ventura come flattering reports of the beet crop now growing. There are upwards of 10,000 acres tributary to the Oxnard factory planted to sugar beets.

The early onion crop of Thermal is going to bring a large sum of money to the growers. A car load of onions per acre is being harvested, 12 tons to the car. This is sold for 2 to 2½ cents the pound f. o. b.

Seventy-one hundred acres seeded to beets and an estimated tonnage of 75,000 is what perfect weather conditions this winter have brought to the farmers within a radus of six miles of the Alamitos Sugar Factory.

The San Francisco wholesale dairy and produce exchange held a special meeting at the Ferry Building last week. A sale of butter, fresh extra, was made at 19c. For fresh ranch eggs 16c was bid, and for new California cheese 11c was bid.

LIVE STOCK.

There will be a meeting of the Kings County Poultry, Pigeon and Pet Stock Association on Saturday, May 19th, and all members are urged to be present.

There has been a big increase in the butter output at the Watsonville creamery lately and the plant at present is manufacturing about 1000 lbs. of butter daily.

The last big round-up of horses in Eastern Washington has been in operation the past ten days, and about 3000 of the wild equines have been brought into the corrals.

Half-a-hundred leading live stock men of Tehama County held an enthusiastic meeting in the Court House last week for the purpose of organizing a stockmen's association.

The Tehama County Wool Growers' Association set May 1 as salesday for their clips, but no sales were made. There were a couple of San Francisco buyers in Red Bluff who interviewed the wool men but no offers were made. The wool men are asking from 28 to 30 cents for their wool.

David Griffith, who is connected with the National Department of Agriculture is here with a view to possibly locating a cacti experiment station. It is the purpose of the Government to locate in California an experiment station to develop the prickly pear into a plant of commercial value as a feed for stock.

SAN DIEGO HONEY CROP.

It is claimed by the bee men in the Escondido section that the honey crop will be unusually light this year on account of the cloudy weather. The bees in this section feed mostly upon the flowers of the white sage, and we have had so much cloudy weather the sage has not blossomed as well as it usually does. We hope that the output will be much heavier than is anticipated, and feel sure that it will be, for the reason that there is such an abundance of flowers, both wild and tame this year, that we feel sure the bees will have plenty of sweets to feed upon.

In other parts, generally, it is claimed the outlook for the present season is excellent—in fact, the best since 1884. Predictions are not based solely upon heavy sales, but also upon the fact that we have had abundant rains during the winter, and the honey-bearing blossoms are in astonishing profusion, especially on the late flowering plants.

This actually appeared among the editorial notes in the Emporia Gazette: "This actually happened. A farmer's cattle broke into a neighbor's field of corn and the neighbor filed suit in a justice court. Appraisers appointed to assess the amount of damage done to the field of corn, on examination found that the cattle had been in the field but had not eaten an ear of corn because they could not reach it. They decided that no damage had been done and the suit was withdrawn."

LINER ADVERTISING

Advertisements in Liner Column will be charged 1¼ cents per word. No advertisement taken for less than 25 cents. Eight words to a line.

LINERS

FOR SALE—A FEW THOUSAND BLUE Gums, cheap to close out, Address L. Z. Huntington, Anaheim, Cal.

ANCONA EGGS (FROM PERPETUAL EGG Machines), imported and domestic matings. $2, $3.50 and $5.00. L. L. Viereck, Pres. Ancona Club, Albany, Oregon.

WANTED—WILD TURKEYS EGGS AT $100 00 per setting. Address only The Grace Glory Grounds, Brawley, Calififornia. Wilds of wildTurkeys (acclimated).

BLUE ANDALUSIAN EGGS FOR HATCHING, from three noted strains, $2.50 and $3. Incubator lots $7.50 to $15.00 per 100. Mrs. T. R. Griffith, 3111 Walton avenue, Los Angeles.

FRUIT CANNING MACHINERY FOR THE Ranch or Factory, 6sizes, $10 to $225. All appliances, highest award by U. S. Trades Report. Address, W. S. Ritchie, Pacific Coast General Agent, Corona, Cal.

FOR SALE—WHITE MINORCAS EGGS $1.50 sitting from one of the nicest pens of Wh. Minorcas in Southern California. Lay the most eggs and the largest-whitest eggs of any breed. Call and see them at 547 W 54 St., or address 1004 E. 9th St. Also incubator chicks for sale.

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The Most Perfect Light for Less Than the Cost of Kerosene. Also a Fine Fuel. No Smoke. No Odor.

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Live Stock and the Dairy

BY MRS. MINNA. E SHERMAN, FRESNO. CAL.

THE HERD.

The good dairyman raises his own cows and grades them in the line of his performance. In our neighborhood a good cow of this type sells from $75 to $80 very readily.

There are a large number of cheaper grades that find their principal use in being traded around by men who make a living selling mis-fit cows.

The cows of mixed breeding that are not bred to line but are cows bred by using grade dams and crossing first with one breed and then with another, are rarely superior as dairy producers and even when bred to a pure blood sire a per cent of their offspring will be reversions.

Among pure-bred animals crossbreeding is an abomination and makes hopeless mongrels. The two great dairy herds of the United States are the Jersey and Holstein, When crossed they are the worst mongrel. If the offspring inherits equally from each parent, they usually take the wrong side, as the small flow of Jersey milk united with the Holstein low per cent of butter fat, producing inferiority.

The Durham and Holstein make a better cow, while the Guernsey is best on the Jersey, though why anyone should cross pure bred cattle today is past finding out, for the numerous strains within each breed will give enough variety for practical improvement along any line.

There is a confusion in the mind of many people, owing to ignorance—mainly by bringing in fresh blood, as practiced the men who founded the great breeds originally did. These men carefully selected sires to increase the excellence of their selected cows and when the breeding had been continued long enough for a fixed type to be produced, one that could be depended upon to transmit to the offspring, then a herd book was formed and all animals that were sufficiently good were recorded, becoming the foundation of the herd book of the breed and then after that only animals of recorded parents were admissable to registration. Later in dairy cattle a second or Advanced Registry was formed and only recorded animals could compete. These had under official inspection to make more than a certain amount of butter within seven days. It simply was a removal of the records of amount of butter from a "say so" idea to an exact account. It was wonderful how some famous cows fell in their productions when the amount was calculated by a disinterested party and no estimate of amount of milk fed calf, or used in the family, were made to be added to the total.

The need today is for owners of pure bred cattle to recognize that careless mating causes deterioration. The idea of using any pure bred sire must be given up. There should be at least three sires in a herd of a hundred cows. The owner, then, should study the cows as carefully as possible, measure and score them, and then choose the sire that will breed out the defects. The high cut or short cut udder in front, the high shoulder, the beefy thigh, the coarse head, and the drooping flank, are all to be bred out of a herd. The faults of conformation are defects in the breeds. Now the scale of points has been built up by the wisest breeders and has been amended again and again by the members of the association until it represents the wisdom of many most learned in the science. The scale of points therefore is not nonsense but a carefully built up system of judging a perfect physical animal. While there may be an occasional animal of superior excellence that is defective, it is because she has overcome by latent qualities, not because of her lack of form. Her weakness will not become strength for transmission of good except she be carefully mated to breed away from them. And even then her sons I should not use to head a herd of pure bred cows; no matter how phenomenal a butter maker she might be, for I should regard her as a freak rather than as a vehicle to carry high quality to her descendants. Her descendants I should use and try to breed strongly away by using sires from dams that were true to type.

The training of the calf begins when it is taken from its dam, and takes its milk from the pail. The sooner the grooming begins the gentler the calf becomes. The udder and teats should be handled and the little one must be carefully protected from having other calves trying to nurse her or else the tender udder will be dragged out of shape.

The importance of keeping the heifers growing rather than fat is apparent, so a little grain while they run on grass helps. I would rather run them on short grass than on heavy alfalfa, giving them some hay and grain. When on heavy alfalfa they grow fat. Instead of being lean and muscular they had better be more like the deer rather than beefy. The calves raised for exhibition purposes are not as well fitted for future dairy usefulness as the more lean less pretty calf kept at home. In California the calves run out all day and have a shed filled with clean straw for night use. This makes them rugged and sickness is rare if the sheds are whitewashed and their manure removed frequently.

Exhibition ring spoils both cows and owners for dairy purposes, for the judges are influenced by condition, while a heavily milking cow or a heifer that is lean has little chance to pass up to a blue ribbon.

The performance record of a cow sometimes tells even against this. A winner at our State Fairs for some years has had a cow that has no type of her breed. She has even won over cows that were typical animals.

BUTTER TAINT.

Mr. P. H. Kieffer of Iowa, who scored the butter at the late Minnesota convention at Mankato gave a very instructive talk afterward, concerning the butter and its faults. Here are some of the things he said:

This had a sort of flavor that we sometimes call "barn" flavor. This barn flavor we traced down in Iowa and found it is due to unclean conditions—it is uncleanliness. It is a bacterium. There are two different kinds of taints, bacterial and mechanical taint in cream, and in butter.

When we find it is a mechanical

Cream Separators, all sizes, all prices. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

GEO. C. ROEDING, BREEDER OF HIGH-GRADE
Thoroughbred Holstein Bulls and Heifers
Thoroughbred Berkshire Boars and Sows
FRESNO, CALIFORNIA

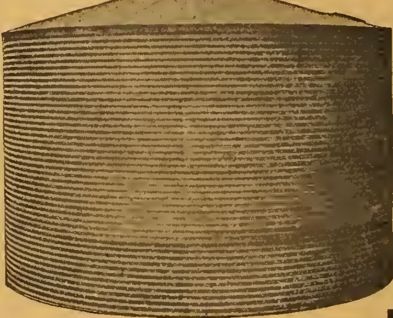
Thoroughbred Poland China Swine and Black Minorca and Barred Rock Poultry
High grade stock of best strains Young stock for sale. M. BASSETT, HANFORD, CAL.

John Lynch Breeder of Registered Shorthorns
MILK STRAIN
P. O. Box 321 - Petaluma, Cal.

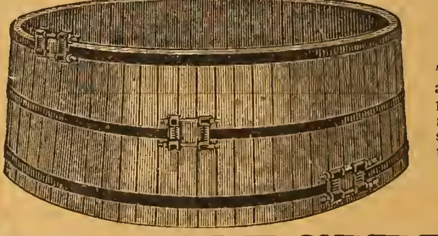
Thoroughbred Holsteins
Four thoroughbred bull Calves from (6) six weeks to (3) months old, De Kol Strain. For information see or write
J. M. Spencer, - - - Compton, Cal.

Star Milk Coolers
We have them. The latest and best on the market.
Send for Catalogue and Prices
We make a specialty of Sanitary Creamery and Dairy Outfits. Our stock all new and we handle only the very best and latest improved machinery. Write us.
O.J. WEBER Co.
555 & 557 So. Los Angeles St. Los Angeles, Cal.

YOUNG STOCK for sale at all times. Farms located in Los Angeles and Riverside counties. Detailed information regarding stock furnished on application.
STERLING MILK COMPANY
INCORPORATED
Col. J. M. C. Marble, Pres. Fred E. Smith, Gen. Mgr. W. C. Marble, Secty.
J. E. Marble J. E. Fishburn
REGISTERED JERSEYS
REGISTERED BERKSHIRE HOGS
REGISTERED HOLSTEINS
THOROUGHBRED HEREFORDS
hone Home 1166. Office, 205 Tajo Building, Los Angeles, Cal.



J. F. HOLBROOK CO. make the only
Corrugated Galvanized
STEEL TANK
in California. Just the thing for the farmer. No leaks, no driving of hoops after a few days of warm weather. Shipped to any part of the coast. Prices on application. Write for description and catalog. Address all mail
J. F. HOLBROOK CO.
310-14 East Market St. - Los Angeles, Cal.



TANKS Stock Tanks Water Tanks Oil Tanks Wine Tanks
Tanks for stock, oil, water, wine and cyanide. It will cost you one cent to get my prices. In stock, tanks from 1000 to 10,000 gallons. Get my delivered prices. I can save you money. An expert is not needed to erect my tanks.
R. F. WILSON MANUFACTURING WORKS
MAIN AND LINCOLN STS., STOCKTON, CAL.

U S U S U S
World's Champion Cow
The Guernsey cow here illustrated has proven herself the biggest butter producer in the world. This letter tells the story.

"Milwaukee, Wis., Feb, 12, 1906.
My Guernsey cow, Yeksa Sunbeam, No. 15439, holds the World's record for a yearly butter-fat production, having made in a year 857.15 pounds of butter-fat. She also made 14920.8 pounds of milk testing 5.75 per cent. fat; this is the largest amount of milk produced in a year by any Guernsey cow.
The butter exhibited from my farm was awarded FIRST PRIZE over all at the State Dairymen's Convention at Waukesha, Wis., scoring 97½ points.
I use the United States Cream Separator, of which I have three on as many farms. Fred Rietbrock."
Don't miss the point of this story: GOOD COWS and the
U. S. CREAM SEPARATOR
is a combination that means biggest profit to dairymen. You feed your cows to produce rich milk, and to get the most butter-fat from that milk you need a U. S. Cream Separator because it Holds the WORLD'S RECORD for CLEAN SKIMMING.
Our new, handsome 1906 catalogue tells all about the U. S. Read it before you put any money into a cream separator. Just write us, "Send catalogue number [illegible]". You'll get one by return mail. Better lay this paper down and write us now while you think of it.
VERMONT FARM MACHINE CO.
Bellows Falls, Vermont.
Eighteen centrally located distributing warehouses throughout the United States and Canada. Prompt delivery. 436
U S U S U S
Prompt Delivery Assured California customers from San Francisco warehouse No delays. Address all letters to Bellows Falls, Vt.

Warranted to Give Satisfaction.

Gombault's Caustic Balsam

Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for **Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.**

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. ☞Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

Advertising Column for Members

OF THE

JERSEY BREEDERS ASSOCIATION

OF SOUTHERN CALIFORNIA

Organized for the general advancement of Jersey interests, to extend knowledge of their superior merits, for the mutual benefit of members, and to increase the profitableness of one of the State's greatest industries. Breeders are requested to unite with the Association.

FOR SALE

A registered bull calf, 6 months old and a beauty. Uniting the blood of the famous World Fair champion cows Ida Marigold and Brown Bessie combined with the Sweepstakes' Bull Pedro.

No finer combination in breeding can be found in the State. This individual is fit to head the best herd. Detailed information on application.

Sterling Milk Co. 205 Tajo Bldg. Los Angeles, Cal.

BULL FOR SALE

Having sold my ranch I am forced to sell Golden of Biltmore. 60082, a grandson of Golden Lad's. Golden of Biltmore is one of the best, ***if not the best*** sire on the coast, several of his daughters less than two years old selling for over $200 each. Highest bidder for next sixty days takes him. If everything is not just as represented, I will give anyone the ***bull free of charge. I sell on merit.***

C. S. Burgess, Riverside, Cal.

Pure St. Lambert Bull

—ST. LAMBERT OF RAMONA, No. 62633,—

heads the Ramona Herd of Registered Jerseys of

Geo. W. Thomas, Riverside, Cal.

The Whiting Jersey Stock Farm Co.

Have moved their herd of Jerseys from San Bernardino, Cal., to the famous Imperial Valley, and hereafter their post office address will be Heber, San Diego Co., Cal., from which they will conduct all their business. Abundant green feed every day in the year will be of great advantage in the best development of our young stock.

Whiting Jersey Stock Farm Co., Heber, San Diego Co., Cal.

LEMONITA HERD

Leffingwell Rancho, Whittier, Cal.

Service bull "SARGENT FOX," 64833. Bred on the Island of Jersey. Sire, the great Flying Fox, that sold at auction for $7,500. Dam, Miss Sargent, reserve winner over Jersey; winner of seven first prizes and five championship cups. "One of the grandest cows the island has ever produced."

VENADERA HERD

. . OF REGISTERED JERSEYS

For Sale, yearling bull Ruth's Gordon King, No. 72360 A. J. C. C. He is of richest breeding on both sire and dam's sides. Also three richly bred heifer calves by Marigold's Exile King, from cows that are good yearly producers. For particulars write

GUY H. MILLER, RIVERSIDE, CAL.

Oakhurst Jerseys

Sons of imported Golden Marquis out of prize winning and tested dams. for sale.

L. Bradbury Duarte, Cal.

Kings Victor King of St. Lambert

At head of herd. Young stock for sale.

H. N. WILLIAMS COMPTON, CAL.

taint we do not lay that to the buttermaker, do not lay it to the man taking care of the milk; it is laid to the cow; but when it is a bacterial taint it is caused by something getting into the milk or cream after it has been milked. That is what we call bacterial taint, and a mechanical taint is something that has got into the milk by the feed the cow ate. That kind of taint never grows any more. You can take the milk from the cow and set it at a high temperature and that flavor will stay just the same, but a bacterial taint will develop at high temperature and you can grow it and it grows stronger. We lay the trouble in our butter to feed sometimes, but in tracing it down it is usually bacteria and not a mechanical taint.

These bacteria get in either in the stable or by straining the milk through cloth that became yellow through use in straining. That will give you very foul bacteria and that may be the cause of this barn flavor. In Iowa, at a creamery there, the butter was running off not very bad, but about 92, this was at a whole milk creamery. We went through the milk and found just one can of milk, eighty pounds in the can, and we took this can of milk out of the day's run and the next day the butter was all right. We ran this can of milk through the separator and I took some of the cream home in a milk jar, churned it at home and it had the awfulest smell I ever noticed. I sent it to the agricultural college at Ames and they carried it there for two weeks; that taint grew and it was a bacterial taint. It was simply dirt. That paper that was read here yesterday by Mr. Shrewsbury I enjoyed very much. It is a paper that ought to go into the hands of every man that is milking cows, because that is the foundation of quality. The farmer is the man that is the foundation of quality, and you can educate your buttermakers to the highest standard and if you do not give them the raw material they will not be able to satisfy you.

When the farmer who produces the milk really believes what Mr. Kieffer says, that he is the foundation of quality, then we will have gilt edge butter in every creamery all bringing the highest market price. But so long as the farmer does not believe that great truth, things will go as unsatisfactory as they have gone.

Hoard's Dairyman has been hard at work for years trying to pour light in upon the farmer's mind on this great question, but it can do nothing with the 90 per cent, who cannot be reached by papers or books, and yet they want to make just as much profit as anybody, while they are all the time destroying their profit. The things Mr. Kieffer speaks of are happening every day at nearly all the creameries, especially with these who take gathered cream.—Hoard's Dairyman.

VALUABLE COWS.

C. W. Leffingwell of Whittier writes as follows regarding his fine Jerseys:

Editor Cultivator:—Your readers will be interested to know that two more cows of our herd have completed yearly authenticated fat estimates, large enough to enter them in the Advanced Registry of the A. J. C. C. Russet Duchess, No. 160014, gave milk, 8444 lbs. 15 oz. and butter fat, 411 lbs. 14 2-5 oz.; this cow scoring sufficient points to become eligible, has been entered in Class A.

Veterinary Instruments, Black Leg and Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

EMPIRE RANCH

KINGS COUNTY, CALIFORNIA

19,000 Acres Alfalfa Land (The Great Money Maker for the Dairy Business), **Dark, Rich Alluvial Soil** (Best in State for Fruit and Vines) **Kings River Water** to irrigate every acre every year. This ranch is the cream of all the land in the San Joaquin Valley. In lots of 20 acres and up.

Prices $45.00 and $50.00 the Acre

Easy Terms

PERCY H. CLARK CO. **H. W. HELLMAN BLDG. LOS ANGELES, CAL.**

Write for Illustrated Folder

FOR SALE

RUSSETT DUCHESS, 160014

ADVANCED REGISTER, CLASS A, A. J. C. C.

This cow has recently completed a Yearly Authenticated Fat Estimate, giving milk, 8445 lbs., 15 oz.; butter-fat. 411 lbs., 15 2-5 oz. She is a daughter of Vela Hastings, Advanced Register, Class A, with a similar record, of milk, 7486 lbs., 3 oz.; butter-fat, 450 lbs.

Due to calve May 30, to Sargent Fox. For price address

C. W. LEFFINGWELL, JR., WHITTIER, CAL.

Winksette's Regina, No. 149188, gave milk, 8874 lbs. 13 oz., butter fat, 497 lbs. 13 oz. We were unfortunate in losing her from milk fever before she was scored so that we have had to be contented with entering her in Class B. A matured cow must give 400 lbs. or more of fat for entry in this Advanced Registry, and to get into Class A must score 80 points or better.

Owing to our land being all planted in orchard we have decided to reduce the number of our herd and keep only about five cows in milk; our experience would indicate that better success in breeding can be attained by sticking to one family and we have therefore decided to make a specialty of the Winksette family, with which we have had splendid success. We have some magnificent cows of other strains which are therefore for sale and at prices which will prove very attractive to those who fancy the several lines of breeding which they represent. We have not a cow in our herd that has not made a record large enough for entry in the Advanced Registry, and we have some great yearling heifers from these cows by Sargent Fox, all of which are for sale. It will be our purpose to advertise each animal as she freshens and we hope that they will go into good hands where they will be appreciated. The one offered for sale this week in your columns, Russet Duchess, is a large hardy cow with good udder and teats, giving about four gallons when fresh and milking with great persistency through the year. With such a cow a family need be without milk only a couple of weeks each year; as for her offspring, her yearling heifer by Sargent Fox is a beauty, of unusual promise.—C. W. Leffingwell, Jr.

If low and unprofitable prices for farm products could be prevented in the future, we believe this country could be guaranteed seventy times seven fat years and then some more. Keep the millions of farmers contented and prosperous, and no great industrial calamity can befall the nation.

The dairy cow should be bred for generating in milking lines, she should have a typical dairy type, and a strong vigorous constitution and dairy capacity.

See Us for Sanitary Milk Bottles. O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

BERKSHIRE BOARS—ALL AGES

T. WAITE, PERKINS, CAL.

Sharples TUBULAR CREAM SEPARATORS

Will you buy a bad separator because the agent is a "good fellow?" Some people do. They should read this.

If You Have a Brand New Separator

not a Tubular, put it in the garret. **We guarantee Tubulars to make enough more butter than any other separator, and from the same milk, to pay 25 per cent yearly interest on their cost. You test them free side by side.** Your decision is final.

Carnegie is using investments paying 6 per cent; here is a guaranteed 25 per cent to you. The waist low supply can—simple bowl—enclosed, self-oiling gears—are found only on Tubulars. Catalog T 260 explains it.

THE SHARPLES SEPARATOR CO.

WEST CHESTER, PA.

TORONTO, CAN. CHICAGO, ILL.

Dr. PAXTON'S COUGH AND THROAT REMEDY TRADE MARK

For Catarrhal Fever Pink Eye, Distemper and all diseases Nose and Throat

Cures the sick and acts as a preventive for others, and is given on the teeth and tongue. Safe for Brood Mares and Colts and all others. $1.00 per box, ½ doz. $5.00. Sold by druggists, or sent express paid.

Paxton Veterinary Medicine Co., Box 95, Sta. C. Los Angeles, Cal

CUTTER'S ANTHRAX AND BLACKLEG VACCINES

Are given the preference by 80% of California stockmen because they give better results than others do.

Write for prices, testimonials and our NEW booklet on Anthrax and Blackleg.

THE CUTTER LARORATORY

Berkeley, California

SAN FRANCISCO FIRMS.

In addition to the business firms heretofore mentioned the following San Francisco houses are located (some temporarily) as below given. Most of them are old time advertisers in this paper, some are now represented and others will be as soon as they are ready for business:

The Krogh Mfg. Co., have opened a temporary office and works at 2124 Folsom St., San Francisco. They have in stock all sizes of centrifugal pumps and will be able to make prompt shipments. Orders sent them will have immediate attention.

Peter Bacigalupi's phonograph agency has been removed to 1113 Fillmore St.

The Pacific Implement Co., 133 Kansas St., was not damaged by the fire. Their factory buildings escaped and they have a full stock of implements. They can make prompt shipments at any time. They were too busy to send copy for their advertisement this week but soon will continue their announcements in the Cultivator.

Balfour Guthrie & Co., importers of phosphate powder and nitrate of soda lost their San Francisco office and have opened up temporarily at 2110 Washington street, San Francisco. All orders for fertilizing materials can be promptly filled as they have stocks at Fresno and Los Angeles to draw upon.

The National Wood Pipe Co., have opened a temporary office at 518 11th St., Oakland, and are able to fill all orders promptly as their factory was not injured.

The Byron Jackson Machine Co., have located at 18 Telegraph Ave., Oakland. They have made arrangements whereby all orders can be filled and have also arranged for a new site on which will be erected new works much larger than their old ones and they expect to be in full operation within sixty days.

Fairbanks, Morse & Co. are located at 969 Broadway, Oakland, where they will fill orders from their Oakland stock and also from their branch at Los Angeles. They expect to be back in San Francisco very soon.

Harron, Rickard & McCone have secured a new location at 7th and Berry Sts., San Francisco. Their warehouse was not injured and they are able to fill all orders.

The Polytechnic Business College, 12th and Harrison Sts., Oakland, were fortunate in not sustaining any great damage. Their school is going right along and the summer session is now open.

Breuner Bros., the big mail order house, formerly at 127 Bluxome St., and also at 426 Townsend St., were completely burned out. Their loss was about $1,000,000. They are starting the John Brenner Co. at 12th and Harrison Sts., Oakland, and have just completed a new frame building. Orders and cash for goods sent to San Francisco house are being returned. Anyone having occasion to write to their San Francisco house should address correspondence to their temporary office at 951 Eddy St., San Francisco.

The West Coast Wire & Iron Works were entirely destroyed by fire, losing both factory and stock. Their new address will be 134 Hanover Ave., East Oakland, until further notice.

The Paraffine Paint Co., factory was not injured and their temporary office is in the Union Bank Building, Oakland.

Baker & Hamilton's big supply house will be found at 113-117 Berry St., near Third and Townsend Sts. Their Los Angeles house will also supply all demands.

W. P. Fuller & Co. did not lose their factory and they are, for the present, located at 412-414 12th St., Oakland, where all San Francisco letters should be sent.

Woodin & Little, formerly at 209-211 Market St., have opened a temporary office at 701 Scott St. Their fine stock of goods was completely wiped out but they will resume business as soon as a suitable location can be found.

Pascal Dubedat & Co. lost their entire stock and will not be able to supply more than fifty per cent of their regular trade for some time. They will be in a new location and ready for next season's business.

M. Bettman Co., importers of all kinds of chemicals, rosin, etc., have opened new offices at 1355 Post St., San Francisco, and are ready for business. They are advertising caustic soda at present.

The Imperial Cash Store, formerly at 532 Washington St., have a temporary home at 325 Church St., and will soon be ready for business. As yet they have not found a desirable location.

The Western Meat Co. lost their general offices and wholesale market at 6th and Townsend, but their plant at South San Francisco remained intact and is running as usual. All correspondence should be addressed to South San Francisco, San Mateo Co., where their business offices are now located. They are fully prepared to take care of all business and later will be back in a good location in the city.

The Burr-Paddon Real Estate Co., formerly at 40 Montgomery street, have opened a temporary office at 1909 Fillmore street.

The San Francisco Sulphur Co., were wiped out but have opened an office at Utah and Alameda streets, San Francisco. They will be ready for business soon and by the coming season will be in shape to supply all customers.

The De Laval Dairy Supply Co., were burned out among the rest and have opened on office at 309 12th st., Oakland. As their branch houses at Los Angeles, Seattle and Portland are well supplied with their goods, business will be continued without interruption. Write them as above.

Francis, Smith & Co., have opened a new office at 8th and Townsend st. Their old office was destroyed but their works were damaged but slightly and they are able to promptly fill all orders for irrigating pipe and water tanks.

Smith's Cash Store was among the first to be burned out and among the first to resume. They are at 16 Steuart street and are filling all orders for groceries and hardware promptly. They wish to thank all old customers for past patronage and will be pleased to receive their orders and also to reach as many new ones as possible.

C. C. Morse & Co., seed growers, whose handsome advertisement has greeted the readers of the Cultivator sustained loss in the fire but their wholesale warehouse at Santa Clara was not injured. They are without a definite location at present and letters should be sent them for the present to "general delivery" San Francisco. Their street number will be announced later. As soon as a good locatio can be secured they will be as fully equipped for business as before the fire.

The Pacific Coast Borax Co., lost their office but are now located at Room 80 Bacon block, Oakland. They are fully prepared to fill all orders and can supply their goods on the shortest notice. No change is made in their advertising except the address above stated.

Profit in the Poultry Yard

BY MRS. A. BASLEY, HOLLYWOOD, CAL.

A SUCCESSFUL BROILER RANCH.

We all like to hear of the successful achievements of others and I think the account of my visit to a broiler ranch will interest many.

I am still away "attending Farmers' Institutes" and incidentally meeting with nice poultry breeders and seeing a few of the many successful poultry plants in the country.

Yesterday I had to wait at beautiful Oceanside for several hours so I telephoned to Mr. Culver of Carlsbad that I would like to see his poultry plant and especially his large adobe incubator planned and commenced by J. P. Jones, who built the adobe incubator at the Mission View Ranch at San Fernando.

Mr. Culver promptly appeared with his large automobile and took three of our party to his ranch three miles away as easily as a bird would fly.

Arrived there we first visited his three brooder houses, two are one hundred feet long, and the third measures one hundred and fifty feet in length. These houses are large and airy, the ventilation seemed perfect. The brooders are home made by Mr. Culver, who appears to have a genius for inventing, and are heated by a pipe system of his own. The brooders are fourteen feet long by two feet wide, and Mr. Culver tells me the chickens do not crowd and are perfectly healthy.

In proof of it he showed us the six weeks old chicks from his first hatch. He bought the eggs, mostly from Santa Ana commission houses or ranchers, at market prices, out of 2400 eggs of various breeds (or no breeds for he discovered a hundred duck eggs in the lot) he hatched two thousand and ten chicks, of these now over six weeks of age, he has only lost fifteen or less than one per cent.

Mr. Culver feeds by the dry hopper system, keeping dry chick-feed before the chicks all the time, he says he finds this by far the best way he has ever tried. He has been eight years in the business, and he has had lots of experience in that time.

He makes all his own hoppers, as well as his brooders. He keeps grit, bone, and charcoal always before the chicks, besides clean fresh water. The water fountains are glazed stoneware jars, each holding about half a gallon of water, these are inverted into an earthenware plate, like a pie plate.

What impressed me most in his place was the extreme cleanliness and neatness.

"Yes," he said, "I never have any lice or mites, but I fight them just as if they were there."

He and his industrious little wife clean the brooders every day, fill up the hoppers and keep the water fountains full twice or three times a day. Cleaning and filling fifty water fountains is no light work even when

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK

BUYS THE WORLD'S FAMOUS
EGG FOOD NO. 4

MIDLAND

IF YOU WANT EGGS
YOU WILL FEED NO OTHER

Used by all the largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the **GOLD MEDAL** at the St. Louis World's Fair for greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1604.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A FILCHER, Commissioner.

And Now Comes New Reward for Merit:

Read the following telegram received from the Lewis & Clark Exposition at Portland:

"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

PETALUMA INCUBATOR CO.

Main Office and Factory, Petaluma, Cal., Box F. Los Angeles, 505 South Main Street
San Francisco Office and Salesroom, 33 Market St.

Raise Every Chick

If every Chick hatched last season had reached maturity in 60 to 90 days—hardy, strong and vigorous—how much extra money would you NOW have in the bank?

You could have SAVED these Chicks—every one—if you had used

Purina Poultry Feeds

—for one kind—Purina Chick Feed, is made on purpose to save the lives of little Chicks, and make them grow like weeds. And it DOES IT. Brings up the highest percentage of every hatch EVERY TIME.

The other Purina Feeds MAKE EGGS—make your hens lay all the year 'round—make zero weather eggs EASY. They do this EVERY TIME, and with EVERY HEN, too.

These may sound like "broad statements."

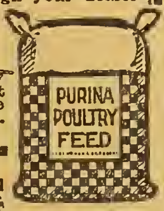
But don't take OUR WORD for it—try it—prove Purina Feeds yourself by feeding them to YOUR hens or chicks at OUR EXPENSE. If the RESULTS don't come, just tie up the bag and write us, and we will return every penny of your money, and tell you what to do with the unused feed. You are not out a cent in making the trial, for we will supply you through your dealer or direct, FREIGHT PAID, and the feed used in testing will cost you nothing.

This is the Money Back line ☞

Ask for particulars about our FREE TEST Plan. Write today—you can't afford to wait.

ACME MILLS CO.

PACIFIC COAST MANUFACTURERS
PORTLAND, OREGON



Buff Wyandottes

Eggs from pens mated with 2nd prize Cockerel or 2nd prize Pen L. A. Show, $2.50 per 15. Stock and yards at San Gabriel. **Wm. J. Bodger, 251 S. Main St., Los Angeles, Cal.**

BARRED ROCKS
EXCLUSIVELY
Send for 16-page 1905 Catalogue
H. R. CAMPBELL
Box O PETALUMA, CAL.

WHITE MINORCA EGGS

Best of Stock. Great Layers.
$1.50 setting, $8 100, $65 1000.
S. W. MORGAN,
Sunnyside, San Diego Co., Cal.

Mountain View Poultry Ranch

S. C. White Leghorns—Heavy layers. Eggs, $1.50 per 15, $5.00 per 100.

Indian Runner Ducks—Males for sale. Eggs, $1.00 per 13, $3.00 per 50, $5.00 per 100.

Mrs. J. L. Updyke - Fullerton, Cal.
Successor to Jacob Kreger

Fairview Poultry Yards

Special offer of breeding stock. To make room for young stock I offer two pens of my select White Rock breeders, each consisting of 6 fine 2-year-old hens and a splendid yearling male, at $12 for the pen. Or, if preferred, will sell one pen of 6 extra good yearling hens with vigorous 2-year-old cock at same price. These birds will please you.

A. E. NELSON EL MONTE, CAL.

New Hatchery

Baby Chicks

White Leghorns, 10c each. Large orders a specialty. Eggs from fine, large thoroughbred stock. Terms cash. Order now.

Wm. A. Green, Azusa, Cal.
Home Phone 5184

Get More Money for Your Eggs

Hager's Egg Preservative is unquestionably the only one on the market that will keep ***fresh*** eggs ***fresh.*** It costs ***only one cent per dozen,*** sold on a strict guarantee to do as claimed or money refunded.

☞ Write today for booklet with full instructions and ***sample package.***

Hager's Egg Preservative Co.
St. Louis, Mo.

every thirty feet there is a neat little sink and water faucet.

There were between four and five thousand chicks in two of the houses and another hatch coming out tomorrow, which will tax the capacity of even his largest house.

The most interesting part of this broiler plant is perhaps the mammoth incubator built of adobe. It is an octagonal room sixteen feet in diameter, with shelves all around it except at the entrance, and shelves around a pillar in the middle. The shelves contained about five thousand eggs, although they are built to hold eight thousand.

The five thousand were due to hatch the next day and could be heard talking in their shells, whilst some of the energetic Leghorns were emerging as we watched them, a day too soon.

To see five thousand eggs at one glance is quite interesting and I could imagine the hatching.

The thermometers were standing at 103 degrees and the hydrometer at 75 degrees. Mr. Culver informed me that the heat did not vary in the least, he could keep it at exactly any degree he wished, and the atmospheric moisture also, but one very interesting point was that this year, in order to dry out the eggs sufficiently, to have a good hatch, he had to keep the air much drier, than ever before, he kept the hydrometer about 45 until the last week.

He said many people in his neighborhood were having poor hatches and he attributed it to the damper weather we are having this year. His system of heating and ventilation is about perfect. He uses distillate as fuel and one hatch costs him between eleven and twelve dollars only, whilst by the old plan of incubators he formerly used such a hatch would cost more than three times as much.

"Does a broiler plant pay?" I asked as we were leaving this most interesting ranch. Mr. Culver smiled and told me he had just put six hundred dollars into improving the plant and he expected to get that and more back. He said he could not supply the demand. The little cockerels he sold as broilers, the pullets he sold usually to neighboring ranchers as soon as they were weaned from the brooder, getting more for them than for the cockerels.

"Yes," he said, "a broiler plant pays, but you can't run an egg farm as well, one line of business run properly will pay, most people try to do too much. Better stick to one thing and do it well."

DON'T BE A CHUMP

Breathes there a man with soul so dead that to himself he never said, "My trade in chicks is getting bad, I'll try another ten-inch ad." If such there be, go mark him well. For him no bank account shall swell, no angels watch the golden stair to welcome home a millionaire. To such a man the noisy din of traffic may not enter in, for bargain seekers by the score shall pass, nor heed, his dingy door. Tread lightly, friends, let no rude sound disturb his solitude profound. So let him live in calm repose, unsought except by men he owes. And when he dies, go plant him deep, that naught may break his dreamless sleep; where no rude clamor may dispel the quiet that he loves so well, and that the world may know it's loss, place on his grave a wreath of moss and on the stone above: "Here lies a chump who would not advertise."—Exchange.

The egg is sometimes so strong shelled that the chicks cannot break out. Some have found that by withholding the oyster shell for a little while before eggs are saved for setting, the eggs are not so thick shelled. Where bone meal, oats, etc., are fed, the egg has a very good shell without oyster shell. But this should be done only for eggs to be set.

The keeping quality of eggs is a very different matter from fertility. It is the general belief that infertile eggs keep better than fertile.

RED HEN RANCH

Eggs for sale from Prize Winning **Rhode Island Reds.** Send for circular. **W. Frank Greenleaf, Santa Ana,** or **404 H. W. Hellman Building, Los Angeles, Cal.**

WILLARD POULTRY FARM, HYNES, CAL.
Mrs. F. T. Hungerford, Manager
14 Ribbons at The Last Los Angeles Show.

Indian Runner Ducks' Eggs:—$1.00 per 13, $3.00 per 50, $5.00 per 100. White Minorca and White Wyandotte eggs:—$1.50 per 15, $4.00 per 50, $8.00 per 100. Eggs carefully packed and shipped any where.

Buff and Black Orpingtons
Buff and Brown Leghorns
Indian Runner Ducks--Bronze Turkeys
Eggs and Young Stock in Season
W. W. Bliss - Duarte, Cal.

The Breed for Profit The Breed for Beauty
THE NEW AND POPULAR
Columbian Wyandotte
Eggs $2.50 per setting for balance of season
A few trios at reasonable prices.
ED. M. BURNELL
Box 265 South Pasadena, Cal.

A POULTRY COLONY
NEAR LOS ANGELES HAS BEEN FORMED

for mutual benefits. Situation unexcelled; plenty of good water, splendid soil and close to town. Only a few acres left. Apply at once to

Anna L. Pinkerton
Realty Trust Company, 129 So. Broadway, Los Angeles, Cal.

THE FEATHERLEY FARM ORPINGTONS

Over 30 prizes, specials and cups in **Buff, Black and White Orpingtons** on 27 entries this year at San Francisco, San Diego and Los Angeles. Bred for utility and egg purposes, as well as prize winning qualities. Eggs from $2 to $3 a setting. Write for free mating list, describing my ten prize yards. **P. L. Harley, Box C, Redlands, Cal.**

EGG FOOD
A·C·W
IT FILLS THE BILL

"Time and Tide Wait for No Man"

Poultryman or any other man, now is the time to begin with ***A. C. W. BEEF SCRAP or A. C. W. BLOOD CRYSTALS.***

These goods are not to be fed heavily, as they are pure and concentrated. Feed light and feed regularly, and you will see that altho summer is here your fowls will do well.

We manufacture these goods ***here*** and ***we know*** what you get and you can see if you want to, right here. We are glad to show you.

Do not forget the celebrated A. C. W. Egg Food can be fed ***dry.*** The only ***dry Egg Food*** on the market.

Agricultural Chemical Works Office and Factory:
901-907 Macy Street, Los Angeles, Cal.

Write to us direct if your dealer has not our goods in stock

200-250 Egg Fowls	**WHITE WYANDOTTES**	16 Prizes San Francisco

An Oregon customer reports 100% fertility and the finest chicks he has seen for many a day. A California customer reports very hardy stock and but 1% loss from hundreds of chicks hatched and orders 3000 more eggs.

Remember, our White Wyandottes, scored by one of the greatest of Madison Square judges, won an unparalleled record at San Francisco. **25% discount** for May, **100% fertility** guaranteed. **Express prepaid.**

Eggs $3.00 and $5.00 per 15, and $10.00 and $15.00 per 100. Handsomely illustrated circular free.

CAPITOL AVENUE POULTRY FARM
A. L. R. MANTZ Rural 21, Box 98k SAN JOSE, CAL.

Poultry and Eggs Wanted

This sign you will see hanging outside of a merchant's store in nearly every town on the coast and it, in a measure, must convince you that there is money in the poultry business, and the

SIX MONTHS TRIAL

Chatham Incubators

will assist you in making money. Any responsible person can get a genuine **Chatham** and have SIX MONTHS TO PAY FOR IT—what is the use of you paying out money for an Incubator when you can make it pay over and over again for itself?

I can give you hundreds of testimonials from customers all over the Coast who purchased Chatham Incubators and Brooders last season on our **ON TIME PLAN,** and are thoroughly satisfied with them. The manufacturers fully guarantee every machine. Write me for our catalogue and some useful hints on poultry raising—it will be mailed to you free.

Geo. W. Foott, Box 2040, Portland, Ore.

THE CARE OF POULTS.

Go to the nest when the little poults are hatching, remove them as fast as they dry and place them in a flannel cloth in basket or box in the house until the mother has completed her hatch, says the Feather.

Never feed them until at least thirty-six hours old. Then give them hard boiled eggs crumbled with black pepper. To them nothing seems more wholesome. Feed scantily and at least every two hours.

An ideal coop for little turkeys is a large box, four feet long, three feet wide and two and a half feet high. Remove the bottom of the box and make a slanting roof, leaving no floor whatever but nature's carpet—soft green grass—and change the coop to a new location every three or four days. Slat the front of the coop, that they may come and go as they please. Let the mother hen remain in the coop until the poults are about three weeks' old. Give plenty of good fresh water and sunlight. Never use sour milk, except in the form of cheese, of which they are very fond.

The coop should be inclosed by a little yard of broad boards for at least a week, as the little fellows will follow every chicken or fowl that passes the coop, often running so far away they can't get back, thus causing many a step that with a little trouble and precaution may be avoided. Keep plenty of fresh water constantly by them.

When the poults are a week old grease the mother hen on vent, under wings and on her head to prevent the lice infesting the little ones. When the poults are three weeks old grease them on wings and around navel. Be very careful and dont' use too much. Never grease the head of a young poult. Repeat again in three weeks. To keep little poults free from lice is one of the most important essentials in turkey raising.

Never place them on board floors, as it causes leg weakness and disease. Close up the coop at night to prevent them from running out in the dew of early morning. As soon as the grass dries turn out the hen and poults together. They will return to the coop when they get hungry. See that they have clean quarters, plenty of fresh grass, clean fresh water, boiled eggs, millet, cheese, beef meal, corn bread and sweet cream.

Blue Andalusians

From prize winning and egg producing strains. Eggs, $1.50 and $2.00 per 15; incubator lots, $6.50 per hundred.

C. E. Chittick, 124 Avenue 34, Los Angeles, Cal.

Brown and White Leghorns

Prize winners at L. A. Show, '06. Eggs from good laying strains. Eggs, special matings, per 15, $2.00. Incubator lots, $6.00 per 100.

Hemet Poultry Yards, Hemet, Cal.

BUFF LEGHORNS

Eggs for hatching from the famous J. W. Miller strain, Freeport, Ill. $1.25 per 15

CHAS. G. MILLER, 40 Elm St. WATSONVILLE, CAL

White Wyandottes and S.C. White Leghorns

Good layers. Trap nests used. Eggs: Wyandottes $1.50 to 2.50 per 15. Leghorns $1.50 per 15.

J. F. GOETTING, EL CASCO, CAL.

Single Comb White Leghorns and Indian Runner Ducks

Eggs, $1.50 per setting. $6.00 per 100. Send for illustrated catalogue.

John P. Boden, 638 Second St., Watsonville, Cal.

Blue Andalusians

At Los Angeles, 1906, our strain in a class of 68 Andalusians with 16 birds won more firsts than all our competitors combined. Eggs, $1.50 and $2.00 per 14.

Blue Ridge Poultry Yards, 128 Avenue 32 Los Angeles

Single Comb Brown Leghorns

Exclusively

Stock for sale and eggs for hatching. Eggs from first pen $2.00 per 15 eggs, second pen $1.50 per 15. Incubator lots for $6.00 per 100 eggs. They have always won first prize whenever shown. Large birds and heavy layers.

W. E. Mercer - - Ventura, Cal.

EGGBOUND HENS.

Sometimes we have had trouble from hens becoming what is called "egg bound." This is caused by excess of fat, constipation or an unusually large size of the eggs. Mr. Valentine in the Tribune Farmer gives the following treatment for this trouble, which is by no means rare:

"In simpler cases the injection of a little olive oil, with gentle rubbing in a downward direction, may be all that is needed for the expulsion of the egg. In more stubborn cases it is recommended to hold the posterior parts in warm water until the muscles are relaxed, following this by the treatment previously noted. In extreme cases some puncture the egg and remove it piecemeal, using emollient applications later. It is only in the case of valuable birds that so much trouble is worth while. Ordinarily, considering the liability to recurrence, the best thing to do is to use the bird for food before she gets really sick or is lost in an acute attack. Fluid extract of ergot in five drop doses three times a day is recommended for the help of this tendency.

There are many manifestations of ovarian troubles or those of the egg duct which seem quite freakish, doubtless because we do not understand their cause. One season when I raised Leghorns exclusively, about one out of five of all the pullets that laid early in the fall was egg bound, and most of them died. All the young ran together until six months old, and to this I attribute the trouble. It has never appeared since after this fashion, although it might be expected, since the Browns lay a large egg for their size, and the pullets fatten easily, but the eggs are uniform, seldom an abnormal size."

HOW THE MORTGAGE WAS PAID RAISING POULTRY

"Why, cousin John!" exclaimed Eliza Jane as she opened the door in response to his loud knock. "Yes, Eliza, I've come to pay you folks a visit. see, I can afford it now, I've paid the mortgage on our farm." "Paid the mortgage, have you John?" exclaimed Uncle Joshua, as he caught the young man's hand. "Mighty well done. And you've been very steady at it. A faithful son you've been to your mother, my boy. Poor woman, she has not been the same since your father died," and Uncle Joshua's face grew sad for he was very fond of his only sister upon whom so great a sorrow had fallen.

"I've done my best, Uncle, and I've succeeded quite beyond my expectations."

"But you must tell us how you did it," said Aunt Ellen, when she was able to get in a word. "Well, I'll tell you; but I'd like some of that delicious supper first," replied John as he cast a look at the dining table laden with all the wholesome food a farmhouse affords. "I've come a long ways and I'm mighty hungry."

"Why, we forgot all about supper when you came," said Aunt Ellen. "Poor boy, you must be hungry! Come right in and have your fill! We were just going to sit down to eat when we heard your knock and of course, we all had to see who it was!"

"There, I feel better now," said John as he arose from the table after his hearty meal.

"Now for your story," said Eliza Jane.

"Well," said John as his face grew sad, "you know that some years back

$1500

For the above sum, Captain Mitchell of Santa Barbara will sell his poultry business and good will. The outfit consists of 1000 Standard Bred S. C. White Leghorn laying hens and pullets and their fixtures, i. e., Brooders, Houses, Posts; 6 foot "Union Lock" Fence Wire, Etc., Etc.

Sales of eggs for hatching average 14,000 per year at $70 per 1000, and the net income per annum for the last four years has been from $1000 to $1500. For further particulars apply to

Captain Mitchell, Rural No. 1, Santa Barbara

MISSION VIEW POULTRY RANCH

WHITE WYANDOTTES

Stock For Sale, $1.50 and Up. Prize Winning Strain

MRS. C. D. HUBBARD, BOX 282, SAN FERNANDO, CAL.

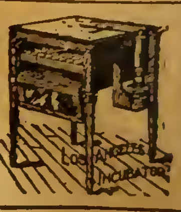
SUCCESS SEND FOR CATALOGUE

IS ATTAINED WITH

LOS ANGELES INCUBATORS

LEE'S LICE KILLER EGG MAKER | LARGEST POULTRY SUPPLY HOUSE IN THE U. S.

HENRY ALBERS 315 S. MAIN ST. LOS AGNELES



Dean's Pacific is an Incubator built on scientific plans and has all the latest improvements. Every machine guaranteed. "Facts From Experience" and Catalog for the asking. Address ***Dean's Place, 2509 Central Avenue, Los Angeles.***

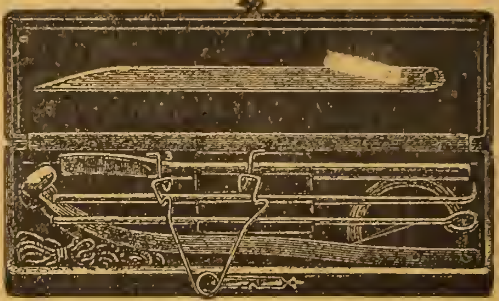
Emery's Pure Meat Meal

Don't believe all we say, but just enough to buy our Poultry Foods

Ask your nearest dealer for them and take no imitations

Emery's "B. B. & B."

THE PACIFIC GUANO & FERTILIZER CO. Successors to N. Ohlandt & Co **San Francisco, Cal.**



Caponizing Set

- Double Your Profits by Caponizing.

Complete with Instructions, $2.50, Postpaid

STOCKMEN'S SUPPLY CO

FRESNO, CALIFORNIA

West Coast Chick Feed

A perfectly balanced ration for the growing chicks. All pure food, no filler, no waste, hence cheapest. Keeps them growing and healthy. Made by

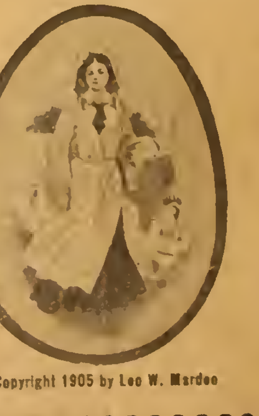
WEST COAST STOCK FOOD CO.

818 San Fernando St. (through to Alameda) Los Angeles, Cal.

SAM'L R. KELLAM, President of the L. A. Co. Poultry Association, says: "West Coast Chick Feed is the best feed for young chicks I have ever used."

MRS. A. BASLEY, the celebrated poultry authority says: "I want some more of your West Coast Chick Feed for it is excellent. It is purer, cleaner and appears better balanced than other feed I have been using, and to tell you the truth I have been experimenting feeeding both together and they always eat yours in preference."

S. M. BUTLER, Lamanda Park, the well known poultry judge and successful breeder, says: "I want to say that too much praise can't be given West Coast Chick Feed for growing Chicks."



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MARDEN EGG FARM

HYNES, CALIFORNIA

Breeders of S. C. White Leghorns Exclusively

Fine Feathers alone do not make the profitable hen. Our fowls have the reputation of being ***extra large, handsome*** and ***extra heavy layers.*** Last season, our eggs averaged over 95 per cent. fertile. ***Remember***—In getting eggs from us, you do not get them from the general runs. We have but one grade of eggs to sell for hatching and those are from our breeding pen composed of only the choicest fowls, selected from hundreds that are ***bred to lay.*** Hens that approach the ***200 egg record.***

Price of Eggs—$1.50 per 15, $5 per 100. ***Send for Illustrated Catalogue. Address,***

LEO. W. MARDEN, Manager

we bought our farm. Then father's health failed and he was ill so long that our little savings were soon at an end and we had to mortgage our farm to pay our bills.

"After father died, mother and I were left alone with three small children and a mortgaged farm. I was needed at home and, for a while, all seemed dark as night. Then, one day, farmer Jones, who has a chicken ranch about twelve miles from here, suggested that I raise chickens.

"'That will never pay the bills we owe,' I said discouragingly.

"'I know it will,' he replied, 'and if you need advice, come to me.'

"I thanked him very kindly and when we parted I commenced to think seriously about it. The result was, that, in the end, I bought some good laying hens and some good setters from Mr. Jones. I could not start on a large scale as I lacked the money, but I got a large experience the first year. Had many losses because I was green, and was often discouraged. But Jones always helped me and I finally began to win.

"I kept all the full-blooded hens together. Ten hens to one rooster is my rule. I also keep the small chicks apart from the large ones, because they require different care.

"I supply the chickens with good, dry, airy coops. The nests I inspect every little while to see if there are any lice in them. I also burn the straw and smoke out the boxes once in a while to be sure they contain no lice eggs. A hen will often leave her nest when the eggs are almost ready to hatch, because the lice bother her so she cannot set in peace. I always keep the houses whitewashed as that seems to assist in keeping insects away. Then I make scratching sheds for exercise in winter.

"Every cold morning I give them warm water to drink, and if possible, warm food. Shorts mixed into a dough with warm water, and a little red pepper is excellent. Besides that, I feed them wheat screenings, ground bones, oats, grit and oyster shells. I found out by experience that green bone was good, so I bought a little bone mill in which I could grind bone, oyster shells, etc. I also found that the hen that lays must be a busy hen. At the same time she must be tame.

"The small chickens need much care. I see that they have a dry house where no draught enters. The small chicks are fed often and a little at a time. I feed them rolled oats, bread and cracker crumbs and when they get older, wheat and corn.

"I set hens the first year, and when I got enough money, I bought an incubator. At first I bought only one, but it soon paid for itself and I bought another and so on until I have three. Of course, I got brooders with them. In that way, it is not so great a task to care for the chicks as if I set them under hens, because there is no mother to lure them into all kinds of places. The brooders, too, keep the same temperature when properly tended. Then, too, I had all the chicks together, which is a great help. I find that my incubator chickens are just as hearty or even more so than the ones hatched under hens. And considering the eggs, I raise more chicks to the dozen eggs in the incubator than to the dozen eggs under the hens. It is the incubator that brings in the dollars.

"All my fresh eggs I sell to customers in town and get higher prices for them than I could from the merchants. I sell the manure to a market gardener and florist. The feathers I also sell. So you see I make use of everything; and the result is that in five years I have paid the mortgage on father's farm and am now well established in the chicken business. There, I guess that's all. What do you think of it? Of course, I made many mistakes but I found out that experience was the best teacher."

"Yes, and Farmer Jones told me yesterday that you were one of the pluckiest and luckiest men he ever saw. You started with nothing, you know," said Uncle Joshua.

"Well, I can thank Mr. Jones for that. He suggested it to me. Any man could do it if he would. He's a good man, that Jones," said John.—Successful Farming.

NEW USE OF TRAP NEST.

One of the correspondents of Feathered Life says that trap nests, aside from telling which fowls lay the greatest number of eggs, may be used to ascertain which hens are producing the eggs that are clear or incapable of being brought to a successful issue when incubated under artificial conditions.

During the many years' practical experience the writer has had in the operation of incubators, he has generally found when testing eggs that those which were unfertile or addled have been the produce of some particular hen or hens. In testing eggs last season it was found that such eggs as failed to survive the period of incubation were almost without exception marked with the same numbers. For instance, out of twenty-three eggs marked nine, eighteen failed to produce chickens, and the few remaining eggs though hatching out, produced chickens of a modest delicate nature.

Now, it is quite possible to ensure hatches of greater percentage by weeding out from the breeding stock such birds as fail to produce good, hatchable eggs, and to do this we must resort to the use of trap nests. If each laying hen has a numbered ring on her leg, and trap nests are used, and the eggs are marked at the smaller end when laid, we shall be able to ascertain from what birds the majority of clear and addled eggs come, when such birds can be removed from the breeding pens and the incubators filled only with eggs from such hens as are reliable breeders.

While the poultry industry is an important one in Germany, it is said that incubators are almost unknown there, consequently in this very important part of farming the Germans are far behind the Americans.

Blue Andalusian Eggs
$1.50 for 15, $7.00 per 100. Free range. I raised and sold cockerel winning first prize at late L. A. poultry show. Stock. ***Mrs. J. S. Duff, 3145 S. Hoover St., Los Angeles, Cal.***

BRONZE TURKEYS
Hart's strain. Winners of five firsts at Los Angeles Show, '06, and always winners wherever exhibited. Write for prices.
Ed. Hart. Clements, Cal.

SHADE'S **Rhode Island . . . Red Farm**
Automatic Chicken Feeders.
Shade's Egg Food sold to consumers only.
San Bernardino, - - California.

S.C. White Leghorns Indian Runner Ducks
Eggs, $1 per setting, or $5 per 100. Leghorns of McFarlane strain Fertility high, 80% guaranteed. ***J. E. Beadle, 901 No. St. Louis St., Los Angeles.***

SONOMA-AMERICAN INCUBATOR
Send for large circular fully describing these machines.
Sonoma-American Incubator Co., - Petaluma, Cal.

EGGS FOR HATCHING
from a heavy-laying strain of
SINGLE COMB WHITE LEGHORNS
I guarantee 100% fertile. Write for prices.
Golden State Poultry Yards, Lordsburg, Cal,
T. E. Mills, Prop. Home Phone 1720

Buff Orpington and Barred Rock Eggs
for hatching from pure bred stock at $1.00 per 14.
Mrs. Albert Miller,
Tel. East 1767. Station A, Los Angeles, Cal.

White Wyandottes.
High scoring stay white birds. 1st Cock L. A. 1906 show and other winners. Eggs $1.50 to $3. per 13. $10.00 per 100. Mount Holly Poultry Yards, Hollywood, Cal. E. W. Preston, Prop., Sunset, Hollywood, 901.

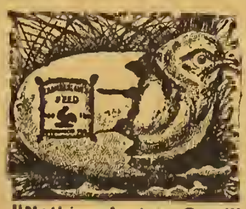
White and Buff Wyandottes
Prize-Winning, Egg-Laying, Wealth-Producing Strain.
M. E. DILLINGHAM, 6x67 San Gabriel, Cal.

THOROUGHBRED YOUNG CHICKS
White Leghorns, 10c.
White Ply. Rocks, 12½c.
C. L. GREEN, Manager, ANAHEIM, CAL.

High Grade **S. C. Rhode Island Reds White Plymouth Rocks and Buff Leghorns**
All new matings this season. Some of the breeding birds personally selected by the owner in the east last fall. Strong hardy stock, bred to lay and to win. Our Reds won at San Francisco, San Diego and Los Angeles shows. Best eggs $2.00 for 15, $5.00 for 50. From good utility matings $1.00 for 15, $3.00 for 50.
Lake Avenue Poultry Yards
757 N. Lake Avenue - Pasadena, Cal.

Protect The Hens
To Raise Fine Birds
You must first of all provide comfortable quarters.
Profitable Egg Getting...
success in poultry business demands it. It is not necessary to invest a fortune in your poultry house. It is not necessary to build a heavy expensive poultry house.
Use for the Roof and Sides the genuine
Pioneer Rubber Sanded Roofing
Makes a Light Structure—solid, strong and absolutely weather-proof. That wear-proof surface of hard flint sand means years and years of extra wear without additional cost. Send for samples and prices.
Our complete Roofing Guide "D" will tell you about every class of Roofing and Building Paper for every purpose. Send for it to-day.
PIONEER ROLL PAPER CO.
Los Angeles, California.

Chamberlain's Perfect Chick Feed


"Nothing Just as Good"

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World's Chick Feed of To-Day. The only original **Dry Chick Feed.** All others are worthless imitations. **Chamberlain's Perfect Chick Feed** was used exclusively at the great St. Louis World's Fair during the 7 months. This the highest compliment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.

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THE TRANSPORTATION OF FRUIT IN REFRICERATION.

Continued from first page.

ment before the peach develops flavor quality or the highest color. The fruit arrives with a flat, insipid flavor, giving the section the reputation for producing fruit of inferior quality. The western peach is a luscious fruit when ripened on the tree. In the future competition among localities in the markets of the world, such a region must appear at a disadvantage unless the fruit has some redeeming merit other than quality that makes it acceptable to the dealer and the consumer. The problem that the western peach grower wants solved is—and this applies to other perishable deciduous fruits of the west—how can the fruit be handled after it has developed a high color and a hard ripeness on the tree so as to lay it down in sound condition in all parts of the cargo in distant domestic or foreign markets. On the solution of this problem depends the future development and the permanent stability of the peach business of the Pacific Coast.

* * *

The Effect on the Citrus Fruit Industry—We will refer to the citrus fruit industry as a third and final example. The losses from decay in transit in the orange and lemon from California amount to about one-half million dollars annually. The orange is wrapped and is packed tightly in boxes that weigh 72 pounds when full. The packages are stacked on end in the car, usually two tiers high. After the first of March, the fruit may range from 60 to 90 degrees in temperature when loaded. The temperature of the air in the refrigerator car may drop to 40 to 50 degrees in three to ten days, but the fruit in the center of the package remains several degrees warmer for many days. As a result, the decay in the fruit in the top tier of packages is greater than in the bottom, often by 10 per cent and worst in the center of the package in both tiers. We know that the orange can be stored safely for many weeks at 40 degrees temperature if the fruit is stored quickly after picking. The problem that the California citrus fruit grower wants solved is, how can the fruit be handled so as to insure the safe arrival of all parts of a cargo in the most distant domestic and foreign markets. California now produces 30,000 carloads of citrus fruits. The problem will need to be solved in the near future to prevent temporary domestics gluts by the opening of more distant markets.

We might multiply examples indefinitely to bring out the relation of the present methods of handling fruits for transportation to the limitation of their markets, but the typical references already made will indicate the nature of the problems we have in mind.

* * *

Losses not all Caused by Transportation—We would not leave the impression that all of the losses in transit in perishable fruit are due primarily to the conditions surrounding it in transit. On the contrary, many of the most important commercial losses from decay in the thick skinned fruits, like the apple and the orange, are caused largely by the rough treatment of the fruit in picking and packing, thereby making it susceptible to decay. Fruit that is perfect physically may be landed in distant markets in sound condition even under adverse conditions in transit, but bruised fruit is likely to develop losses under the most favorable condtions in transit. We need to reform the methods of handling the fruit crop in America fully as much as we need to improve the transportation conditions. This phase of the subject is one, however, which which cannot be handled in this paper.

* * *

Improvement Needed for Safe Transportation.—From the standpoint of the keeping of the fruit in transit, an economical, practical method is needed to reduce the temperature of the fruit more quickly after packing than is accomplished by the ordinary refrigerator car. A more uniform distribution of the air in the car is also needed. Nearly 400 patents have been taken out in the United States with a view to improvement in the refrigerator car service. The patents cover construction, air circulation within the car, ventilation, the capacity and arrangement of ice tanks, mechanical and chemical refrigeration, and various other subjects. There has been an enormous improvement in the efficiency of the refrigerator car since the first patent in 1867. The improvements have usually been attempted by modifying incidental features of existing cars, and those in practical use have been selected with a view to the requirements of modern railroading. Complicated mechanism, of which there are innumerable instances in the patents referred to is apparently impracticable when applied to the modern refrigerator car. Anything that delays the movement of trains or is beyond the skill of the average brakeman to handle is clearly out of place. I do not care to express an opinion as to the possibility of improving refrigerator cars along the lines mentioned. I would refer those problems to you gentlemen as expert engineers, and I would propound these questions for your further consideration:

1. Is it possible to construct a refrigerator car to be cooled with ice that will refrigerate a load of strawberries or peaches in hot weather quickly enough to check the rots and the ripening of the fruit in the warmest parts of the car?

2. If not with ice alone, then with ice and salt, with liquid air or by other chemical or mechanical refrigeration, keeping prominently in view the fact that complicated mechanism is of doubtful utility in the handling of the refrigerator car service.

These things have not been fully accomplished by the 400 patents on refrigerator cars. If it is not practical to do so, then we would propound the further query: Should a refrigerator car reasonably be expected to accomplish the initial refrigeration of the most perishable fruits in hot weather and to maintain the refrigeration afterwards, or, should we ultimately expect the refrigerator car to transport safely perishable products that are placed in the car in good condition for transportaton? Under present methods of handling fruits, the losses originate largely during the period of slow initial refrigeration. In the fresh meat trade this difficulty is obviated by refrigerating the product before shipment and by maintaining a lower temperature in transit by the use of ice and salt. Perishable fruits from Australia to the United Kingdom are likewise refrigerated before shipment. Most of the Eastern grown Bartlett pears are refrigerated in warehouses before exporting. Bananas are now being cooled in train loads in transit, and it is proposed to refrigerate the canteloupes in the semi-arid Imperial Valley of Coachella, California, before shipment to the East.

* * *

Cooling Fruit Before Shipment.—We know that many of the large commercial losses in perishable fruits in transit would be overcome if a practical method could be devised of cooling fruit sufficiently and economically before shipment, provided an equal improvement in the method of handling the fruit in the orchards and packing houses can be brought about. We know that the refrigerator cars in common use, when well iced, will maintain a uniform temperature of 35 to 40 degrees in a load of fruit indefinitely, that the fruit can ripen more fully on the trees if cooled before shipment, that the differences in maturity between the fruit in the top and bottom of the car is largely reduced, and that the fruit arrives with better quality, as the air of the car is dryer and purer during the trip.

Therefore I desire to ask you to consider the following questions:

1. Is it practical to construct warehouses at fruit shipping points, to be operated as a private or a transportation enterprise, at central packing houses or on large fruit ranches for the quick cooling of fruits, the probability being that the warehouses would be used a comparatively short period of the year unless it could be combined with a cold storage and ice-making business?

2. Is it practical without interfering with the movement of traffic to refrigerate fruit initially in cars by blowing cold air through the car from a refrigerating machine.

3. If the fruit could be loaded at a temperature of 35 or 40 degrees, could the freight-carrying capacity of the car be increased by closer piling and higher loading without endangering the condition of the fruit?

4. Could the capacity of the ice tanks be reduced, the temperature of the fruit still be maintained and the carrying capacity of the car be further increased under this method of treatment?

5. Does any method of maintaining a low temperature seem more practical than the use of ice?

These are some of the fundamental problems that the fruit grower has to face in his effort to build up the American fruit industry. They are not problems that can be settled offhand by the grower, the shipper, the car line, the railroad or the engineer. The interests of each are closely interwoven with the interests of the others. We submit the refrigerating problems for your consideration, with the hope that their importance may seem worthy of your attention.

"Are you interested in Panama?"
"Oh, yes, very much. That's the place George's hat came from, isn't it?"—Brooklyn Life.

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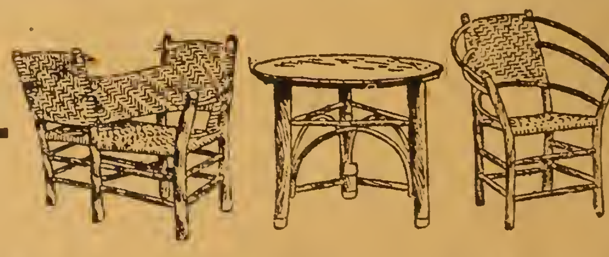

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Queries and Replies

BEES ROBBING.

Editor Cultivator:—Will you please tell me how to prevent bees from robbing? Subscriber.

Close the opening in the hive so that there will only be room for one or two bees to pass at a time. This will give the guards or sentinels a chance to "swat" every enemy as he enters. A weak force can stand off a single file of invaders, but when they pour in six or eight abreast, they can't stand it. If you catch the robbers at work, throw some water in the entrance to the hive till you get it regulated. These are only remedies. The preventive is to keep the colonies strong and they will not be robbed. This is accomplished in a number of ways. Do not take honey from such swarms while weak. If they do not seem to pick up, change the queen or take some frames of strong brood from a good hive and give them to the weak ones. Do not leave any waste honey or scraps of comb with honey in them where bees can get at them. Any person wishing to engage in bee culture should secure a bee book.

LEAF OF PLANT.

Mrs. L. D., Wilmington—It is almost useless to send in a leaf for identification for no one could tell with certainty what such a plant is. It is a guess at best. Flowers should also be sent and also all information possible. Some plant genera consist of 10—50 species all much alike even in the flower and precisely alike in leaf, habit, etc.

BLACK SCALE.

Editor Cultivator:—Can you tell me which is the best and cheapest way to free small orange trees from black scale. They have been put out one year. L. B., Anaheim.

Have them gassed in the regular way at the proper time. This is in the fall. Your local inspector can advise you about the time, as different localities develop scale at different periods.

ALKALI ON LAWNS.

Editor Cultivator:—There are two spots in my lawn which contain alkali. I flooded and washed it off several times but does not seem to get any better. Do you know of any chemical which will destroy it? The spots are only five feet square, it would not take much chemicals to take it out. Do you know of anything to do away with the alkali? "Imperial".

If the alkali is the carbonate of soda, a liberal dose of gypsum will change it into a milder form, but will not remove it. The carbonate of soda will turn the ground brown or a very dark color. We know of no chemicals that will remove it unless it is what we suggest, but to entirely remove the stuff, it will be necessary to irrigate enough to wash it out of the soil. If you have but a few square feet of it, it would be quicker and cheaper for you to dig it out two or three feet deep and fill in with soil which you know is free from alkali.

TO REMOVE MOSS.

Editor Cultivator:—I would like to know of a spray that would take the moss from the trunk of prune trees. I have a prune orchard that has never been sprayed and the trunks of the trees are mostly covered with moss. So I would like to know if there is a spray of any kind that would remove the moss. A Subscriber, Gilroy.

Spray with lime sulphur and salt. It will improve the condition of your trees independent of the moss. This spray is made by boiling for one hour and a half, 20 pounds of best lime freshly slacked, with 20 pounds of the best sulphur. Then add 20 pounds more of freshly slacked lime and 15 pounds of stock salt and boil for half an hour longer. Make it up to 100 gallons and use while hot. This must be used only during the season when the trees are dormant. For a summer application you will have to confine yourself to whitewash which is not as effective as the above but is good.

SHIPPING ORANGES.

G. Harold Powell, the government expert sent here to study the causes of orange decay, met in an informal way a few packers and fruit men in the packing houses of the National Orange Company at Riverside last week. This was one of the series of little conferences at which Mr. Powell detailed some of the results of this season's experiments to the men vitally interested in this important work.

How important this work is may be inferred from Mr. Powell's opening statement that there was a loss by decay of five per cent on all oranges shipped from Southern California in 1905. The losses are caused by the blue mold which attacks the orange through a mechanical abrasion, or through a weakened skin. Numerous causes contribute to an abrased surface—clippers, gravel, brushing, and washing, etc.

That the growers and shippers are perfecting their methods is demonstrated, Mr. Powell said, by the fact that whereas the average amount of clipper cut fruit is five per cent this year, last year it was nineteen per cent.

The experimental work this year has been to test packing, fruit handled in different ways in the packing houses and shipped under pre-cooling, icing and ventilating. All of the experiments include brushed, unbrushed, washed and imperfect fruit.

Results of the season's experimental efforts were embodied in a series of charts which recorded to a mathematical nicety the results accomplished.

The first chart showed an average decay in forty to fifty packing house experiments in which the fruit was left in the house for two weeks in the sweat room. The chart indicated that there was but a trifling decay in the unbrushed fruit, four per cent decay in brushed, 12.5 per cent decay in the washed, and thirty-six per cent in the imperfect fruit. Mr. Powell argues that this experiment shows that the orange as it comes from the tree is a perfect fruit, and that the decay increases as the handling grows more complex. The fruit deteriorates by washing, due partially to the rubbing of the skin by brushes, the softening of the fruit and by the fact that the water is full of decay spores.

Another chart showed the result of twenty-five cars in an experiment to show the result of holding the fruit in the house different lengths of time after packing. The fruit shipped immediately developed two per cent decay, a delay of two days developed five per cent and five days, ten per cent.

Another chart showed the results of four cars delayed in hot weather. The chart indicated that there was practically no decay for the first day, but the decay gradually increased until the seventh day it reached 5.5 per cent in brushed fruit. The decay in washed fruit increased much more rapidly, reaching nine per cent on the fifth day.

Another chart indicated shipping experiments under ventilation, iced and pre-cooled. Under ventilation there was practically no decay in either unbrushed or brushed perfect fruit. The washed perfect fruit showed, however, a decay of 4.5 per cent, imperfect fruit, 17 per cent. This per cent was decreased in the iced fruit, which showed on its arrival the following decay: Unwashed, 0.1; brushed, 0.5; washed, 2.7; imperfect, 6. In the pre-cooled fruit there was no decay in the brushed or unbrushed, 0.5 in the washed, and 1.5 in the imperfect. The loss was four per cent when washed fruit was held in the house four days.

The coast region, mid-valley and upper valley regions were tested for the keeping qualities of their fruit, and there was found to be little difference in the keeping quality as the fruit comes from the tree. Ninety per cent of the fruit in the upper valley is not washed, while ninety per cent of the fruit in the coast region is washed.

The unbrushed fruit in the three regions has developed about one per cent decay; brushed from 3½ to 4½, and washed fruit about 12 per cent.

An experiment for decay with washed fruit showed decay of from two to nine per cent in the top of the car, and from one to five per cent in the bottom of the car, according to the number of days it was held in the house before shipping. Delayed imperfect fruit showed decay from ten to thirty-six per cent at the top, and from two to eleven per cent in the bottom of the car. There is little difference in the decay in different parts of the car in perfect brushed fruit.

Summarizing the results of the experiments, Mr. Powell said that sound, clean fruit was a fundamental for successful shipments. Fruit that is mechanically bruised, or fruit that has to be washed is most likely to decay. It should be shipped as quickly as possible after picking to prevent the starting of decay, and it should be as cool as possible when shipped.

A BIG DEMAND FOR A BIG TOOL

Mr. Killefer, manufacturer of the famous Killefer Cultivators and orchard working tools, informs us that his new Killefer Clean Cut Weeder is having an exceptional demand. One firm in Portland had ordered some $1200 worth of these tools, which shows how the farmers in that section appreciate this implement, and were so concerned during the recent earthquake at San Francisco as to wire down as to whether the Killefer shops in Los Angeles were still in line for manufacturing. This one firm expects in a short time to take a full car load of these implements.

This weeder has been a very great success in orchards, on beet, bean and grain lands. The one point which Mr. Killefer feels its strongest, excepting the effective work which it does, is the construction of the angle of the weed cutting knife. This particular feature has been patented and is such that it very much prolongs the life of the knife and gives the most effective service.

A. J. Petter, 109 Court street, Los Angeles, who advertises rupture absolutely corrected and makes a specialty of elastic stockings, shoulder braces, etc., is proprietor of the oldest establishment in Southern California and his reputation is good. A letter to him will be promptly answered and in many cases immediate relief can be given.

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Household Department

LONG AGO

"I once knew all the birds that came
And nested in our orchard trees,
For every flower I had a name—
My friends were woodchucks, toads, and bees;
I knew what thrived in yonder glen,
What plants would soothe a stone-bruised toe—
Oh, I was very learned then—
But that was very long ago.

"I knew the spot upon the hill
Where checkerberries could be found—
I knew the rushes near the mill,
Where pickerel lay that weighed a pound!
I knew the wood—the very tree
Where lived the poaching, saucy crow
And all the woods and crows knew me—
But that was very long ago.

"And pining for the joys of youth,
I tread the old familiar spot,
Only to learn this solemn truth:
I have forgotten, am forgot.
Yet here's this youngster at my knee
Knows all the things I used to know.
To think I once was wise as he—
But that was very long ago.

"I know 'tis folly to complain
Of whatsoe'er the fates decree.
Yet, were not wishes all in vain,
I tell you what my wish would be:
I'd wish to be a boy again,
Back with the friends I used to know.
For I was, oh, so happy then—
But that was very long ago."

—Eugene Field.

Promised

No kind fate intervened to warn her as he came into the room, quick and eager, and she went to meet him with outstretched hands and shining eyes.

"I am so glad for you," she said impulsively, giving him her hands. "Don't try to pretend that you are not proud of yourself, for of course you are. We bought every one of the evening papers and pored over them until I, for one, am positively overcome with awe when I consider 'that rising young architect, Richard C. Doane.'" And she swept him a low courtesy. "And fame sat lightly on his brow," she quoted, teasingly.

"But she isn't sitting there yet," he laughed, retaining the slender fingers and holding them tightly in his own. "This is only the beginning. There's plenty of hard work ahead."

"You are sure to succeed," she interrupted softly.

"I can only hope so," he returned. "I have worked hard for it and I feel that it is in line with my other work. Yes," he went on, thoughtfully, "I think we shall succeed."

"And then?" she asked.

His face was very bright and eager, and she found, to her consternation, that the color flooded her cheeks as her eyes met his. Embarrassed, she picked up a spray of apple blossom lying on the table. She walked over to the fireplace, drawing the pink and white petals nervously through her fingers. He followd her and stood with one arm resting on the mantel.

"I wonder," he said in a voice he tried in vain to steady, "if I dare to unfold the rest of my aspirations."

"Why not?" she replied; trying to speak easily. "You know I care very much for whatever concerns you." Under the circumstances this was about as unfortunate a remark as she could well have made.

Reassured, he came closer. "Like all well regulated aspirations," he said, with embarrassed hesitancy, "they are inspired by one governing idea"—He broke off abruptly, and, with a quick step toward her, took her hands in his. His embarrassment had gone and his eyes were very tender. "Surely you know, Catherine, sweetheart," he whispered unsteadily, "surely you know."

For a moment her heart seemed to stop, then with all her strength of will she pushed him from her. "No, no, Richard, I cannot," she whispered brokenly. "I have promised, I cannot."

"Promised what, sweetheart?" he asked, puzzled by this sudden change.

"You know, we have seen a great deal of Mr. Channing lately," she went on unsteadily. "He is often here and is always sending us things—books, games, flowers. Every day something comes either for mother or me. Usually for mother, though—so I never dreamed—he is so much older"—

"Today," she went on, a mournful little catch in her voice, "his man brought those." She nodded toward a curiously wrought bowl on the table, where, massed in sweet profusion, a wealth of apple blossoms overflowed, pink and white and fragrant with faint perfume. "And this." She walked to the desk and, picking up a note, held it out to him.

Mechanically he took it. "Dearest of all women," it began—and he read it to the end.

His face went suddenly white.

"Catherine, surely you will not marry this man?" he demanded hoarsely.

She covered hr face with her hands. "I have promised," she moaned.

"Promised! He doesn't even ask for your answer until tomorrow night."

"I have promised mother," she explained with gentle dignity. "There are business reasons I cannot explain. He was very kind three years ago when father died. We owe it to him to do anything we can."

"It is absurd! Quixotic! The man is three times your age," he returned hotly. Then his voice changed and he took the slender hands in his. "Surely you will not do this thing—let me talk to your mother," he pleaded gently.

"Mother must not know," she said. "Had you seen the distress in mother's face you would know I must do it," she continued. "Don't you understand?" she ended plaintively.

"No, I don't" he answered grimly, "but I do understand that John Channing is worth a couple of millions. Women are all alike," he went on, with sudden bitterness. "It's never what a man is, but what he has that tips the scale. Love cannot compete with Bradstreet. I've been the usual kind of a fool, I suppose,' he ended, with a bitter laugh.

If he had taken her in his arms, then and there, it would have ended differently, but he was very young and very proud, and very unhappy, and thought it was a manly thing not to show how much he cared. Or if she had let him see that he was dearer than any other man, millions or no millions, he would not have gone, but she, too, was young and proud.

So, hurt and angry, he had gone, and she stood where he had left her. She wanted him to go, of course, but it was hard to have him leave her like that. She sank into a chair and leaned her soft, bare arms on the table. The bright, fair head drooped slowly until it rested against them, and the fire light threw fitful, golden shadows on the white folds of her gown and quivered fantastically on the mass of fragrant blossoms over her bowed head.

* * * * * * *

The dance at the Ventor Country Club was in full swing. Lights were blazing; the sound of violins came through the open windows. Inside, the fifth dance was well under way, and a distracted, disheveled young man sought frantically for a tall, golden-haired girl in a thin, white gown.

Meanwhile the owner of the white gown and golden hair had slipped away—away from the lights and music and confusion—away from the vision of a stern, gray-haired man which had suddenly confronted her—and stood on the wide, moonlit porch outside, alone in the sweet-scented dusk.

"You are so silly to act like this," she argued with herself. "He isn't going to hurt you, is he? It doesn't help it any to stay out here and be a coward. Go back. You said you'd do it. Go back." Then she drew closer into the friendly shadows and laid her hot cheek against the cool leaves. "Richard, Richard, dear," she repeated softly.

Inside, the dance was ended. The music stopped with a crash; the dancers scattered in little groups, and the erstwhile distracted young man found evident consolation in the society of a plump little brunette, who showed no inclination to elude him.

Two persons who had been watching the dancers detached themselves from the crowd and came toward her along the moonlit porch; her mother, pretty, graceful, looking singularly young as the moonlight touched her flushed and—yes—laughing face. There was no doubt about John Channing's mirth; he was laughing heartily.

"He certainly said 'For Miss Page,'" "How could I know?" she heard her mother, smilingly, protest. And then, "He probably lost the card—my stupidity! Served me right for being

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To give you an idea how easy it is to can fruits, soups, vegetables, meats, etc., in the Economy way—Note the wide mouth—how easy it is to put your hand in and thoroughly clean the jar. No rough seams inside or out to catch lint, chip into food or scratch you. After pouring the contents in hot and wiping rim of jar, clap on the gold-lacquered cap (acid-proof.) No screwing, twisting or prying. Just press the cap on gently. No bruises, burns, cuts or sprains when you use the Economy. Put clamp on top to hold cap in position while contents are cooling. The cooling forms a vacuum and holds cap on firmly. Jar is then absolutely airtight. Next day remove clamp, which lifts off lightly. If the food was cooked enough cap is held tight by vacuum, and contents cannot spoil, as no air can leak in. If cap loosens, contents were not cooked enough to sterilize, and can be heated again and saved. The Economy automatically informs you if contents are in proper condition to put away. When ready to use, puncture cap with can opener and pry off lightly. No sprained wrists, no unscrewing, no hands gashed by broken glass. No glass particles in food; no smelly top; contents fresh and sweet as the day you put them up. No separate rubber rings required. The Economy is the jar you will use with comfort and satisfaction year after year. There is absolutely no jar that looks like, works like, keeps like, seals like, or opens like the Economy. Using some other jar *cannot* give you any notion of what the Economy really is and what it really will do. Try the Economy for yourself. Ask your dealer for it. Send his name and we will send you, free, a booklet of recipes. Write direct to main office.

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Colonist tickets are honored in tourist sleeping cars which run via the Santa Fe to Los Angeles and San Francisco.

Santa Fe

afraid to speak," in John Channing's lower amused voice. As they neared the shadow in which Catherine stood, he turned and taking her mother's hand in his, lifted it to his lips. His stern face softened as she had not dreamed John Channing's face could soften, and there was a newly tender note in his voice. "As though," he said, "there could be any other woman in the world for me but you.'

Swiftly, noiselessly, Catherine turned and fled; around the club house, across the porch, down the steps, into the moonlit garden, conscious only of divine relief. Then as the absurdity of the thing came over her there came with it an uncontrollable desire to laugh. On and on she ran, struggling with subdued laughter, down the path, away from the lights and noise and people—and almost into the arms of a young man who turned sharply around a corner.

"I beg your pardon," he began politely, then stopped short, staring at the laughing face so near his own.

She held out her hands with a little cry of delight that gladdened his heart; to save her life she could not have spoken.

For a moment his eyes searched hers; then his face cleared as if by magic. He wasted no time in explanations, which could be deferred to a more appropriate season, but proceeded promptly to take the lovely, laughing vision in his arms.—Margaret Richards.

SOME SUGGESTIONS

Editor Cultivator:—You ask for suggestions to the Household department of the Cultivator. I will make a few which, while not wholly original with me, I think will interest some of your readers of this department:

It does not seem to be properly understood nowadays that the less babies are talked to and noticed during the first year or two of their lives the better. On the contrary, it appears fashionable to see how much the tiny infant can learn during its long-clothes stage. All success in training babies, indeed, depends on this calm, letting-alone principle. This leaves the nerves quiet and allows the little frame thus to become accustomed to the strain of acquaintance with this restless, big world of ours. When a child is quiet and amused never offer it another kind of amusement. There is also great wisdom, if one could only make people see it, in continuing this kind of neglect through youth. Nowadays people have an idea that their children will be backward and dull, if they are not excited to forwardness, but this is really not the case. Rest the poor brain while the child is small and it will mature properly.

Along this same line let me make a suggestion about criticising children. Pay just as little attention to their pecularities as is possible. Do not notice every little defect in their character, but keep a few principles in mind and try and insist on them, as for example, truthfulness, promptness and cleanliness. Good manners will be absorbed from parents without talking much about them for children are imitators and what older people do younger ones usually do also. Pay just as little attention to nervous children as you can, remember they are very apt to take on your own condition, and if you are strained to the point of breaking you send out just that electrical force which sensitive children take up. So it is far better to overlook the errors of childhood than to over-criticise and lead to others which may be worse.

We shall soon be getting the hot middle day hours. Here is a little receipt for keeping a room cool which I have tried and think it works well. The cheapest and simplest way to cool a room when the weather is oppressively hot is to wet a cloth of any size, the larger the better, and suspend it in the place you wish to cool. Let the room be well ventilated and the temperature will sink so much as twelve degrees in less than an hour.

Here is a suggestion about the use of cucumbers which will prove valuable I think also. People usually consider that cucumbers are not good for the digestion, and attribute to this really harmless vegetable ill effects which should be laid to salmon and other indigestible foods, with which it is usually eaten. Considering that cucumber consists almost entirely of water it cannot be anything but digestible. Provided that this vegetable is cut into very thin slices and masticated thoroughly, I do not think that the most delicate need to be afraid of it. Cucumber sandwiches made in the following way are very good: Cut the cucumber very thin and steep the slices for a while in oil and vinegar. Stamp out some rounds of thin bread and butter rounds and season with pepper and salt. Arrange in a circle in a dish and serve at once.

THE FOOT-PATH TO PEACE

To be glad of life because it gives you the chance to love and to work and play and to look up at the stars. To be satisfied with your possessions, but not contented with yourself until you have made the best of them. To despise nothing in the world except falsehood and meanness, and to fear nothing except cowardice. To be governed by your admirations rather than by your disgusts; to covet nothing that is your neighbor's except his kindness of heart and gentleness of manners. To think seldom of your enemies, often of your friends, and every day of Christ; and to spend as much time as you can, with body and with spirit, in God's out-of-doors. These are little guide-posts on the foot-path to peace.—Henry Van Dyke.

Hints for the Cook

CREAMED CABBAGE

To make a delicious dish of creamed cabbage take one head and chop fine. Boil until tender, then drain. Cook together one and one-half cupfuls of rich milk, two tablespoonfuls of butter, three tablespoonfuls of flour, pepper and salt. Pour over the hot cabbage and serve.

* * *

CHEESE SALAD.

Color neufchatel cheese slightly with green vegetable coloring and mould it into the forms of small eggs. Place lettuce leaves on individual plats to form small nests and put the moulded eggs in them. Sprinkle the eggs with pink sugar and serve with salad dressing.

* * *

BAKED ONIONS.

Select large, firm onions; wash clean and trim the ends, but do not peel; put into a saucepan, cover with slightly salted boiling water and boil rapidly for an hour, replenish with more boiling water if needed. Turn off the water and drain on a cloth, then wipe dry and wrap each in a piece of oiled paper or buttered tissue paper, arrange in a baking pan, place in a slow oven for one hour. Peel, put in a buttered ramekin, return to the oven and brown basting frequently with butter. Season with salt and pepper. Serve with drawn butter seasoned with a dash of nutmeg.

TRIBUTE TO PUMPKIN PIE.

An enthusiastic pie lover writes of the pumpkin pie: "Comely, brown and toothsome; in which are gathered the best and most seductive flavors of the season, the memories of summer in the fields, the rustling of corn, the fiddling of grasshoppers, and the scamper of squirrels between the furrows where the big globes lay ripening as the pomp of autumn passed and the Indian summer came and went. Each pumpkin's girth is filled with the zest of frosty nights under the hunter's moon, where it lay drawing the final and sweetest drops from earth's bosom. What an offense to kill these savors with overdoses of ginger, cloves and other unworthy spices! The pie may be 'faintly tinct with cinnamon,' and have a suspicion of nutmeg. And but a single crust, and that a lower one; for half the pleasure would be gone if the upper crust hid from view the pale yellow of the middle and the shading through the warm umbers to the ruddily browned edges."

From being a luxury a hot water bag has now become one of the necessaries of life.

Heat is so important a part of medication in almost all cases of sickness that this convenient method of applying it can be used at any time, and for any one, from infancy to old age. A little very hot water should be put into the bottle, so that the soft rubber can adapt itself to any part of the body, and not be a burdensome weight on the part affected. It may be wrapped in flannel or a soft towel if the touch of rubber to the skin is unpleasant.

Many of the sore throats and colds in the head come from a disordered stomach.

The remedy is, not only to use gargles to relieve the immediate distress, but to fast for from twelve to twenty-four hours. Take a laxative or cathartic which will clear out the system, when nature will resume regular work, as before she was abused, and the sore throat and cold will be a thing of the past.

Tools That "Count"

You can dig more ditch, hoe more corn, with a Keen Kutter shovel or hoe than with any other shovel or hoe made. No tools are so well adapted to their various uses as Keen Kutter tools.

Every stroke made with a Keen Kutter tool *counts*—there's no time lost from breakage or false motion. To accomplish the most—in the quickest way—at the least cost, use

KEEN KUTTER TOOLS

See this Keen Kutter Shovel—blade, socket and strap are rolled from a bar of best crucible steel, and oil tempered to give wear, resisting power and elasticity. This shovel has a perfect "hang" for easy handling and great working capacity.

E. C. SIMMONS KEEN KUTTER TRADE MARK

Keen Kutter Hoes, Forks, Shovels, Garden-trowels, Grass-shears, Rakes, Manure-hooks, Axes, and a complete line of Carpenter Tools are all of the same high-grade steel, oil tempered and beautifully finished, handles of first growth, selected Hickory. Every Keen Kutter tool is of the highest *Quality*—the best in the world. If not at your dealer's write us.

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Alfalfa and Fruit Land

To the Homeseeker. It will pay you to investigate our land in the Gridley Colonies, Butte, Co., California. We offer irrigated land as good as any in California at $50. to $100. per acre with a fully paid water right. Water costs only One Dollar per acre a year. We build the ditch to your land.

Anything that will grow in California can be produced on our land. Soil is a sedimentary loam, very deep and free from alkali. This is the land that grows the Big Oaks. No better land anywhere.

Alfalfa and Dairying, peaches, grapes, English Walnuts and figs pay the best Big fruit cannery, also a fruit drying plant at Gridley. New Electric Railway now building.

Good schools, churches, etc; good roads. A prosperous community, with a bright future.

Write for free printed matter.

Chas. F. O'Brien, Gen. Mgr.
30 Montgomery Street
San Francisco, Cal.

The Pomona Pump

The New Pomona Pump is now being manufactured with machine cut gears and machine cut steel or bronze pinions. The pump fitted with this kind of gearing runs as smooth as a clock and there is absolutely no noise or vibration. The company have recently taken contracts for installing their largest sized pump with this class of gearing for the Artesian Belt Water Company of San Dimas, Western Water & Power Company of Glendora and other large irrigation companies. They are required to furnish these pumps with cylinders up to 12 inches in diameter and 72 stroke which has capacity of over 60 Miner's inches of water. The valves are made entirely of phosphor bronze with ground metal taper seats so there is very little obstructiin to the water in passing through them and it is impossible to clog them with sand. These, in connection with machine cut gears, in the pump head, make a strictly high grade pumping outfit and the best by a long ways of anything on the market today.

This head and valves are both protected by United States patent. Beware of infringing as both manfacturer and user are liable.

The company has recently installed one of their latest improved heads for the Santa Anita Land Company, a subdivison of the Baldwin Ranch. Below is what the owners have to say about it:

"The new 38 pump you installed for us on our tract on the E. J. (Lucky) Baldwin Ranch is giving us satisfaction in every way. We think we have the very best that money will buy. Both as regards to pump, material used and installation. We made an excellent change when we removed the pump we had been using and installed your make."

We have pleased these people and there is no reason why we cannot please you.

Send for catalog to

The Pomona Manufacturing Co.
Pomona California

The Produce Markets

Los Angeles Markets.

Los Angeles, May 16, 1906.—The San Francisco disaster has resulted in the diversion of vast quantities of produce to this city, and the receipts are far in excess of a few weeks ago, or of a year ago this date. It has caused no great depression in prices, however, though some lines are slightly weakened.

Butter.

The produce Exchange lowered the price of butter—that is, of fancy coast—at its Wednesday session. It is assummed that the Butter Board of Trade may meet it at its meeting on Saturday, though it may not.

B. of T. Creamery, per roll	.50
Valley Creamery, fancy	47½@50
Coast, Fancy	40@42½
Coast, Choice	37½@40
Fancy Eastern Cubes	24
Cooking	18

Cheese.

Cal. 3-℔. hand	18
Cal. Young America	17
California Anchor, Large	16
Northern	14@14½
Domestic Swiss	20
Imported do	28

Eggs and Poultry.

Eggs, Fresh Ranch	17
Northern Candled	15

There is more difference between prices to producers of poultry and to the retailers of poultry than in most other lines. The following are average prices which dealers pay to producers for live weight:

Hens, per ℔	13
Young roosters, per ℔	16
Fryers	17
Broilers, per ℔	18
Old Roosters	8
Turkeys	19
Geese	12
Ducks	12

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock:

Hogs, 200 ℔s	6½
Prime Steers	4
Cows	3½
Calves, per ℔	4½@4¾
Sheep, ewes, per head	4.25
Lambs, per head	3.25
Wethers	4.75

Potatoes.

Burbanks, fancy	1.60@1.75
Salinas, choice	1.75@2.00

Sweet Potatoes, White.

Highland	1.25@1.35
Oregon	1.55@1.65
New	2.50@2.75

Vegetables.

Onions, fancy Nevadas	2.50@3.00
New Onions	2.50@3.50
Bermuda	2.50
Garlic	8@10
Wax Beans	5@6
Rhubarb, per box	75@1.00
Parsnips, per doz	35
Cauliflower, per doz	85
Asparagus	7@9
Lettuce, per dozen	10@15
Bell Peppers	15@18
Chili Peppers, Green	15
Chili, dried	20
Cucumbers, per doz	75@1.25
Radishes, per doz	15
String Beans	4@6
Beets	40
Green Onions, doz. bunches	25@35
Carrots, doz. bunches	25@35
Peas, per lb	2@3
Turnips, doz bunches	25@30
Celery, per doz	45@60

Citrus Fruits

Lemons, Standard	1.25@1.50
Lemons, Choice	2.00
Lemons, Fancy	2.25@2.50
Navels, Choice	2.00@2.25
Navels, Fancy	2.50
Grapefruit	2.50@3.50
Grape Fruit, seeds	1.50@1.75

Fresh Fruits.

Apples are very scarce and of indifferent quality. A few Missouri Pippins from Colorado are offered, varying in price from 1.50 to 3.00 per box.

Missouri Pippins	3.25@3.50
Apricots, per crate	1.50@2.00
Strawberries	5@6
Dewberries	7@8
Bananas, per ℔	5@5½
Cherries, B. Repub	10@11
Cherries, B. Tar	12@12½
Cherries, White	8
Logan Berries	10
Raspberries	15

Dried Fruits

Evaporated Apples, ch to fy	10
Apricots	5@10
Peaches	10½
Pears	11½
Santa Clara Prunes	4@8½
Smyrna Figs	15@17

Beans, Dried.

Limas No. 1	5.50
Pinks, fancy	2.40@2.60
Lady Washington	3.10@3.25
Small White	3.60@3.75
Black Eyes	6.00

Honey.

Honey, extracted, water white, 60-℔ cans	6
Honey, extracted, water white	5½
Light amber	5
Comb, water white, 1-℔ frames	14@15
Light amber	12@12½
Beeswax	25

Nuts.

Peanuts, Virginia	6½
Peanuts, California	5
Walnuts	13½

Hay.

Barley, No. 1	14.00@15.00
Barley, No. 2	10.00@12.00
Alfalfa, local	12.00@13.00
Whole Hay, No. 2	10.50@12.50
Plain Oat Hay, No. 2	10.00@12.00

Grain.

Purchasing prices f. o. b., Los Angeles, are:

Wheat	1.25@1.37½
Barley	1.20@1.22½
Corn	1.22 @1.24
Rolled Barley	1.40
Bran	1.20
Feed Corn Meal	1.45
Shorts	1.45
Wheat, per cwt	1.50@1.65
Cracked Corn	1.45
Oil Cake Meal	2.50
Cocoanut Meal	1.50

San Francisco Markets.

San Francisco, May 16, '06.

The local market is beginning to assume a normal condition, or at least more so than at any time since the disaster. Many small wooden structures have gone up in the market district and trading is becoming more regular.

The large number of men now emplayed in clearing away wreckage is increasing daily, which gives added demand to all food stuffs which the produce market is doing its best to supply.

Butter.

Dairy products have strengthened somewhat. The following are the ruling prices of the San Francisco Wholesale Dairy Produce Exchange:

BUTTER—Fresh California extras, 17c, steady; firsts, 16@16½c; seconds, 15c; packing stock, No. 2, 15½@16½c.

Cheese.

CHEESE—New California fancy, 11c; firsts, 10½c; Young American, fancy, 12c.

Eggs.

Eggs have increased a couple of cents in the past few days and are stronger in tone. Exchange quotations are:

EGGS—Fresh California selected, 17½c; firsts, 16@16½c; seconds, 15@15½c.

Poultry.

Poultry is too much of a luxury for the distressed city to think of as yet and no quotable prices are made.

Fresh Fruits.

Most of the leading fruits are now offered and find fairly ready sale at following quotations:

Strawberries, per chest, $4.50@6 for large varieties, and $6@8.50 for Longworths; apples, $1.50@2.25 per box; cherries, black varieties, 85@1.10 per drawer; white, 4@6c per pound; Gooseberries, 25@35c per drawer; oranges, navels, $2.25@3 per box, with a few second grade at $2 per box; lemons, $1.50@2.25 per box.

Vegetables.

Dealers are selling vegetables at the following prices: Asparagus, 75@$1.25 per box; green peas, 50@75c per sack; rhubarb, 50@60c per box for small and 70@85c for large; string beans, 5@7c per pound; tomatoes, 75@$1.25 per box; potatoes, new, 1@1¼c per pound; old, Rivers, 80@$1.10 per sack; Oregon, $1.10@1.30; Coos Bay, $1.30@1.40 per sack; onions, new, $1@1.25 per sack; boxes, 25@50c;

THE BOSS LADDER

We have been making the Boss Fruit Ladder since 1895, and thousands of them are now in use. They are lighter, stronger and stiffer than any other make. A 10-ft. ladder weighs 25 lbs. so that girls and boys can handle them. Each step is braced with four wire braces. We will ship one or more to any S. P. R. R. Station in California, on receipt of price—*30 cents per foot and prepay the freight.*

Driver, Abet & Co., San Leandro, Cal.

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Samples and price list upon application.

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255 S. LOS ANGELES ST.
LOS ANGELES, CAL.

Oregon, $2.75@3.75 per cental as to quality; Australian, $3.50@$5; cucumbers, 40@65c per dozen.

Hay and Feed Stuffs

There arrived last week 2100 tons of hay. Part of this came by rail which was the first since the fire. The blockade of local freight will be soon cleared away and more normal conditions will prevail.

HAY—Per ton, choice wheat, $12 to $17.50; wheat and oat, $11 to $14.50; oat, $10 to $14; barley, $8.50 to $12; alfalfa, $11 to $12.50; stock, $7 to $7.50.

STRAW—Per bale, 40c to 60c.

BRAN—Per ton, $17.50 to $21.

MIDDLINGS—per ton, $25 to $28.

GROUND BARLEY—Per ton, $25 to $27.

Flour and Cereals.

FLOUR—Net cash: Family Extra, $4.70@5 per barrel; bakers extra, $4.40 @4.75 per barrel.

WHEAT—No. 1 Shipping, per cental, $1.27½@1.30; inferior grades, $1.18¾@1.25; white milling, good to choice, $1.32½@1.35; with fancy up to $1.40.

BARLEY—No. 1 feed, $1.20@1.23¾, with fancy up to $1.25; common to fair, $1.15@1.18¾; brewing, $1.23¾@1.26¼.

OATS—White, $1.50@1.75; red, $1.52½1.60; black, $1.30@1.40.

RYE—$1.47½@1.55 per cental.

CITRUS MARKETS

CITRUS MARKETS.

Los Angeles, May 16, '06.

The citrus market continues most satisfactory at all points. Auction fruit averages still cling around the $3 mark, though of course, some sales are for fancy prices.

Shipments aggregate about 100 cars per day from Southern California. Navels are nearly cleaned up, not much over 500 cars being left.

New York.

Offerings each auction day usually aggregate between twenty and thirty cars.

Friday's auction absorbed only eighteen cars. Weather favorable. Market firm. Some average quotations were:

NAVELS (Iced)—Red Globe, xc., Riv. Ex., $2.50; Our Pride, xf., Riv. Ex., $2.90; Sweetheart, fy., Riv. Ex., $3.55; Pointer, ch., A. C. G. Ex., $2.75; Floral, ch., S. B. Co. Fr. Ex., $2.80; Gabriella, fy., Indep. Fr. Co., $2.70; Partridge, xc., C.C.U., Ontario, $3.10; Peacock, xc., C.C.U., Pasadena, $2.35; Flower, fy., Upland District, $3.45; Quail, xc., O.-C. Ex., $3.20.

Sweets averaged 2.70 to 3.20; seedlings, 2.45 to 2.75; bloods, 2.60 to 3.35; grape fruit, 1.75 to 3.20.

Monday's auction took thirty-three cars. Market firm.

NAVELS (Iced).—Eagle, xc., Riv. Ex., $3.30; Quail, xc., O.-C. Ex., $3.30; Stag, xf., A.C.G. Ex., $3.30; Square, or., Riv. Ex., $3.35; Parrot, xc., San Antonio Ex., $3.05; Foothill, or., San Antonio Ex., $2.90; Squirrel, fy., A. H. F. Co., $2.85; Pet, xc., S. A. Ex., $2.80; Peacock, xc., C.C.U., Corona, $2.85; Oakmont, xc., C.C.U., Claremont, $2.85; Lion Head, xf., I. L. Lyon & Son, $3.25; Old Mission, ch., C. C. Chapman, $2.90.

Seedlings ranged from 1.60 to 2.70; grape fruit up to $3.25; lemons, 3.00; tangerines, halves, 1.20.

At Tuesday's auction twenty-five cars were sold.

NAVELS, (Iced)—Squirrel, fy., A. H. F. Co., $2.85; Holly, st., Cov. Ex., $2.90; Our Pride, xf., Riv. Ex., $3.00; Square, or., Riv. Ex., $3.40; Caballo, xc., S. A. Ex., $3.00; Quail, xc., O. C. Ex., $3.40; Gabriella, fy, Indep. F. Co., $2.70; Thistle, or, C. C. U. Pomona, $2.95; Lilac, ch, C. C. U. No. Pomona, $2.50; Partridge, xc., C. C. U., No. Pomona, $2.60.

Nineteen cars sold Tuesday.

NAVELS (Iced).—Hawk, ch., S. A. Ex., $2.20; Greyhound, ch., S. A. Ex., $2.65; Green Crown, st., A [illegible] Ex., $2.25; Red Shield, xc., A.C.G. Ex., $2.35; Jameson, fy., Q. C. Ex., $2.90; Ostrich, xf., S. B. Co. Fr. Ex., $2.85; Square, or., Riv. Ex., $3.15; Quail, xc., O.-C. Ex. $3.05; Partridge, xc., C. C. U., Ontario, $2.50; Peyton, st., Valentine Payton, $2.60; Producer, fy., Redl. Or. Prod., $2.90; Mispah, xf., Redl. Or. Prod., $3.00; Rose, xf., Redl. Or. Gro. Assn., $3.10.

Grape fruit, 1.95 to 4.15; bloods, 2.30 to 2.60; seedlings, 2.45 to 2.90; tangerines, halves, 1.10.

Boston.

Eighteen to twenty cars are sold daily at auction. On Friday eighteen cars were sold under favorable conditions.

NAVELS (Iced)—Jameson, ch., Queen Colony Ex., $2.50; Stork, xc., S. A. Ex., $2.75; Quail, xc., S. A. Ex., $2.75; Square, or., Riv. Ex., $3.00; Lochinvar, ch., R.-R. E., $3.20; Sunbeam, xf., Devine Frt. Co., $2.65; Victory, xc., C.C.U., Fullerton, $2.40; Peacock, xc., C.C.U., Corona, $2.65; Seal st., C.C.U., Corona, $2.55; Cosmos, xc., West Highl. Cit. A., $2.80; Clover, xc, R. O. G. Assn., $2.95; Rose, xf., R. O. G. Assn., $3.35; Tahoe, fy., R. G. O. A., $3.15; Iroquois, xc., R. G. O. A., $2.95.

Sweets sold at 1.35 to 2.80; Mikes at 2.65; bloods at 2.05 to 3.00.

Shipments of citrus fruits from California to May 15 amounted to 19,695 cars, of which 2045 were lemons.

Last year's shipments same date were 22,657, of which 1764 were lemons.

ORPHANS ECEIVED

South Pasadena, April 23, 1906.

The following named children have been admitted to the Boys and Girls' Aid Society of South Pasadena since last report:

Orphans—Charles Davis, Amer., 12 years of age, blue eyes and brown hair.

Half orphans—Albert Kujaneck, Ger., 13 years old, grey eyes, dark brown hair. Leroy Hunter, Amer., 7 years old, brown eyes, dark brown hair. Ida Marks, Port., 10 years old, brown eyes and brown hair. Marie Marks, Port., 8 years old, brown eyes and brown hair. Bently Stinhoff, Amer., 10 years old, blue eyes, light brown hair. Walter Higgins, Amer., 12 years old, blue eyes, light brown hair. Maud Hogan, Amer., 13 years old, blue eyes, brown hair. Geo. Mazet, Mex., 10 years old, black eyes, brown hair. Leonard Kujaneck, Ger., 12 years old, grey eyes, brown hair. Walter O'Brien, 7 years old, Amer., blue eyes, brown hair. Arthur O'Brien, 9 years old, Amer., blue eyes, brown hair. Joseph Gardner, Amer., 13 years old, blue eyes, black hair. Harry Gardner, Amer., 13 years old blue eyes, black hair Joseph Marks, Port., 5 years old, grey eyes, brown hair. Guy Frits, Amer., 8 years old, brown eyes, brown hair. Velma Frits, Amer., 6 years old, blue eyes, brown hair. Eva Dutra, Amer., 9 years old, brown eyes, black hair. Orris Mills, Amer., 7 years old, brown eyes, brown hair. Lucile Mills, Amer., 6 years old, blue eyes, golden hair. Frank Escamille, Mex., 6 years old, black eyes, black hair. Hazel Evans, Amer., 11 years old, blue eyes, brown hair. Leo. Rowan, Amer., 9 years old, black eyes, brown hair. Martin Friedell, Amer., 5 years old, blue eyes, brown hair. Sarah Carrillo, Mex., 12 years old, black eyes, black hair. Felisino Carrillo, Mex., 10 years old, black eyes, black hair. Marino Carrillo, Mex., 8 years old, black eyes, black hair. Tom Carrillo, Mex., 5 years old, black eyes, black hair. Ward Clarke, Amer., 8 years old, blue eyes, brown hair. Hartley Porter, Amer., 12 years old, blue eyes, brown hair.

OPIUM and Whiskey Habits cured at home without pain. Book of particulars sent FREE. B. M. Woolley, M.D., Atlanta, Ga., 103 N. Pryor St.

Ladies, send to Weinstock, Lubin & Co., Sacramento, for their free catalogue. It will cost nothing and you will have an opportunity of comparing prices with those you have been paying at local stores. The firm is one of the oldest, largest and most reliable on the Pacific Coast and they guarantee prompt and safe delivery as well as saving and satisfaction. Kindly mention you saw their announcement in the Cultivator.

Either for irrigation, drainage, or power, our readers will be interested in the distilate, oil and gasoline Giant Engines manufactured by Tarbox & McCutchan, Stockton, Calif. They are economic, light fuel consumers and repair bills merely nominal. The manufacturers wil be glad to furnish estimates on any kind of machines or works and a letter directed to them as per the above adress will bring a prompt reply. Their advertisement appears in this issue of the Cultivator.

The Western Gas Engine Company, Los Angeles, builders of engines and hoists, have opened branches in Oakland and San Francisco. Mr. J. F. Willard, formerly manager for Beck, Wakefield & Co., is in charge. They are located at Third and Washington streets, Oakland, and 547 Fulton street, San Francisco.

CERTIFICATE OF PARTNERSHIP.

State of California, County of Los Angeles, ss.

We, the undersigned, J. J. Steadman, H. A. Perkins and Frank Honeywell, do hereby certify that we are the persons transacting business in the State of California, at the City of Los Angeles, County of Los Angeles, under the firm name and style of the Cultivator Publishing Company; that the names in full of all the members of such copartnership are J. J. Steadman, H. A. Perkins and Frank Honeywell, and that the places of our respective residences are set opposite our respective names hereto subscribed.

Names.	Residences.
J. J. STEADMAN,	Hollywood, California.
H. A. PERKINS,	South Pasadena, California.
FRANK HONEYWELL,	1702 Hoover street, Los Angeles, California.

State of California, County of Los Angeles, ss:

On this 12th day of May, 1906, before me, H. E. Storrs, a notary public within and for said county and State, residing therein, duly commissioned and sworn, appeared J. J. Steadman and Frank Honeywell, known to me to be the persons described in and whose names are subscribed to the foregoing instrument, and each of them acknowledged to me that he executed the same.

In witness whereof I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

(Seal) H. E. STORRS,
Notary Public in and for said County of Los Angeles, State of California.

State of California, County of Los Angeles, ss:

On this 14th day of May, in the year of our Lord one thousand nine hundred and six, before me, H. E. Storrs, a Notary Public in and for said County of Los Angeles, State of California, residing therein, duly commissioned and sworn, personally appeared H. A. Perkins, known to me to be the person whose name is subscribed to the within and annexed instrument, and acknowledged to me that he executed the same.

In witness whereof I have hereunto set my hand and affixed my official seal in said county, the day and year in this certificate first above written.

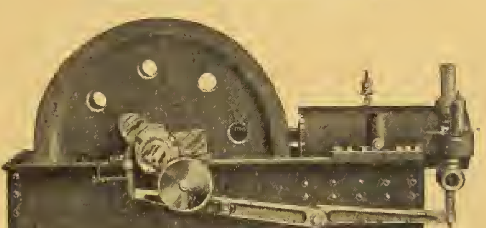
(Seal) H. E. STORRS,
Notary Public in and for Los Angeles County, State of California.

Success Pumping Portable Traction Engines

Gasoline and Distillate

Quality the Best Prices the Most Reasonable

Write for Terms and Descriptions. Agents Wanted



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WHEELER PATENT CONTINUOUS STAVE PIPE
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Puget Sound Office, Olympia, Washington
Los Angeles Office, cor. Sixth and Mateo Sts.
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A booklet, "The Whole Story About Wood Pipe," mailed free upon request

RUBEROID ROOFING

The peer of all with 14 years' record for durability and efficiency.
Cheapest because best.

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242 to 248 So. Los Angeles St., Los Angeles, Cal.

A Delightful Way to Go East

Is Via The

Scenic Salt Lake Route

Some day you will go Back East again. Perhaps this summer. When you do, why not go over the new short line to Salt Lake City, thence ov r the Union Pacific or the Rocky Mountain Scenic Line, Denver & Rio Grande. There's

BEAUTIFUL SCENERY along the line through California, Nevada and Utah. 'Tis not entirely a desert region. You will be surprised when you see the reality.

SEE SALT LAKE.—No extra expense is necessary to stop over a day at Salt Lake City. There's much to interest you in the old Mormon City.

THROUGH SLEEPERS are run on both Salt Lake Route trains from Los Angeles. THE LOS ANGELES LIMITED with standard and tourist runs solid though to Chicago via Ogden, Union Pacific and North Western lines. There's nothing finer in train equipment.

SALT LAKE ROUTE

THE OVERLAND carries every day tourist sleepers from Los Angeles to Chicago via D. & R. G. & Burlington Route, to St. Louis via Union Pacific & Wabash Railroads and to St. Louis twice a week via D. & R. G. & Missouri Pacific Railways. There is also every day a Standard Sleeper through to Denver via D. & R. G.

DINING CARS are carried on both THE LOS ANGELES LIMITED and OVERLAND in which meals are served a la carte. You pay for what you want at reasonable prices and the service is the best possible.

EREE CHAIR CARS are run on THE OVERLAND to Salt Lake City connecting with similar cars on other lines there. These cars are very comfortable. Save sleepers expenses if you wish.

EASTERN EXCURSIONS at much reduced rates will be run by the Salt Lake Route this summer. From all stations in California tickets will be sold as follows for round trip:

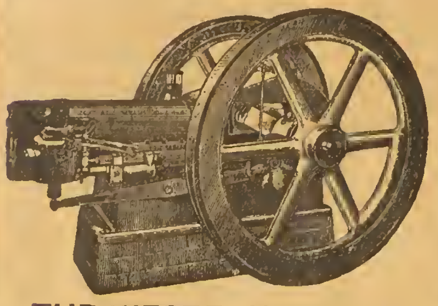
May 25, 26 and 27—New Haven, Conn. Rate 92 10. Return limit Aug. 31st.
June 6 and 7—Louisville, Ky Rate $75.75. Return limit 90 days.
June 6 and 7, July 2 and 3, August 7, 8 and 9.—Chicago and Duluth $72.50.
St. Paul and Minneapolis, $70 00. St. Louis, Memphis and New Orleans, $67.50.
Missouri River points and Fort Worth and Houston, Tex., $60 00.

Also reductions to Atlantic Coast Cities. See Salt Lake Route agents for full particulars and plan your trip to travel over this route either going or returning.

T. C. PECK, A. G. P. A., Los Angeles, Cal.

THE WESTERN GAS ENGINE

"From Factory Direct to User"



THE WESTERN ENGINE
Maximum Power at Minimum Cost

Designed and built by Western experts for Western use with Western fuel. In construction the Western embodies many original, yet practical ideas, which place it in advance of any other make on the market today. The simplest, strongest and best engine for

Irrigation, Power and Electric Plants.
Any Size from 5 to 500 H. P.

Burns cheapest fuel—gasoline, distillate or crude oil—with a saving of 20 to 40 per cent over any other style. **Send for Illustrated Catalogue** fully describing every detail of construction; tells **how** and **why** the Western excels all others; it gives the facts—the proof. Learn what Western engines are doing for others. Send your name today—ask for latest issue, A6.

WESTERN GAS ENGINE CO.
908-932 N. MAIN ST. LOS ANGELES, CAL.

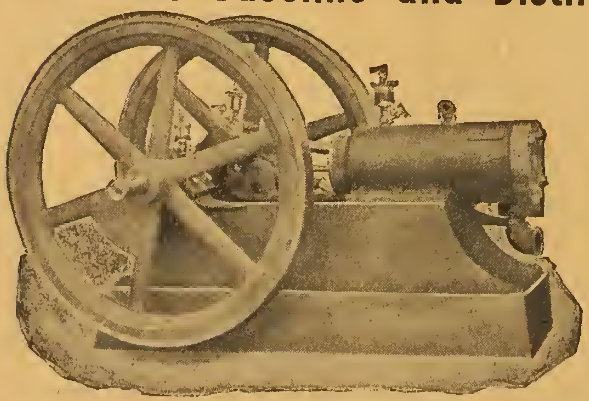
For Irrigation For Drainage For Power

GIANT *Distillate, Gas, Oil and Gasoline* ENGINES

Are the most economical in first cost, fuel consumption and repair bills. Complete equipments for irrigation or drainage. Write us your wants in this line and let us give you an estimate, or call at our works and see the engines in operation.

TARBOX & McCUTCHAN, Manufacturers, COR. MAIN and EAST STS., STOCKTON, CAL.

Samson Gasoline and Distillate Engines



Are Strong and Durable

Fully guaranteed in every particular.

We make complete Irrigation Outfits.

Samson Centrifugal Pumps

Are the best. The enlargement of our factory makes it possible for us to make prompt delivery.

Send for our new catalogue and estimates.

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Office and Factory: 1100 to 1198 Aurora St., Stockton, Cal.
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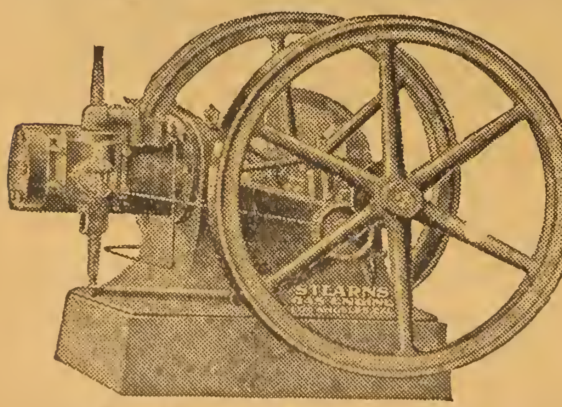
STEARNS GASOLINE OR DISTILLATE ENGINE



Has many points superior to any other engine.

Hundreds in Use

Every One Satisfactory

Built for California cheap fuel.

For further information, write

STEARNS GAS ENGINE WORKS
1001-3-5 NORTH MAIN STREET
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NO, THIS IS NOT AN ARTESIAN WELL, BUT

AN IRRIGATION PUMPING SYSTEM
SUPPLIED BY
S. J. SMITH MACHINERY CO.
POWER PLANTS, PUMPING MACHINERY AND WATER SUPPLY GOODS
212-214 S. Los Angeles St., Los Angeles, Cal.

THE CALLAHAN DISTILLATE ENGINES

A First Class Engine at a Moderate price. Four Carloads have arrived since the fire.

Three Carloads of
Centrifugal Pumps
in Stock.

G. W. PRICE PUMP CO.
Temporary Office
101 Eighth St., Oakland, Cal.
Telephone Oakland 4376

Caustic Soda

60%, 70%, 74% 76%, 78%, 99%. Powdered and Solid. Full information cheerfully given. All goods guaranteed.

M. Bettman Co.
1355 Post St.
San Francisco

U. S. Carbolic Insecticide

Trade Mark **TREE WASH** Registered

To grow fruit profitably must become a study with the grower, and to raise it successfully he must be constantly watching and guarding against the pests that attack both fruit trees and vines.

This insecticide requires no heating or boiling of water, but is used simply by diluting with cold water, assimilating perfectly, requiring no agitation, forms no sediment, no clogging of nozzles, and will not injure the hands in the least, but will, like carbolic acid, heal and cure sores if on them. It is cheaper than any other preparation or method, considering the results obtained.

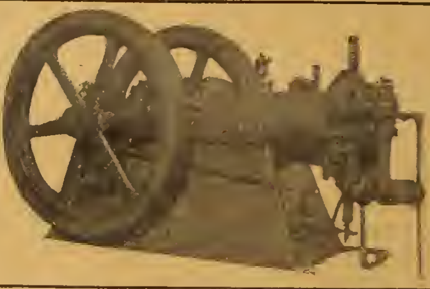
The best fertilizer to the trees. The one that leaves them clean and healthy. The one that brings results and pleases. The easiest prepared for spraying.

Information and testimonials on application to

W. P. FULLER & CO., San Francisco

Portland **Sacramento** **Stockton** **Oakland**
Seattle **Tacoma** **San Diego** **Los Angeles**

The Haynes *Gasoline Engine*



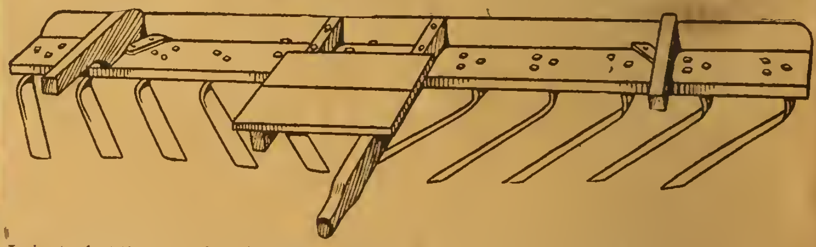
Simplicity is its feature. You do not need to be an experienced engineer to operate the Haynes. My prices are the lowest for a first-class engine. Guaranteed.

I install Irrigation Plants complete. Send for Catalogue and Estimates.

Molbry Haynes
246 N. Hunter St. - Stockton, Cal.

THE

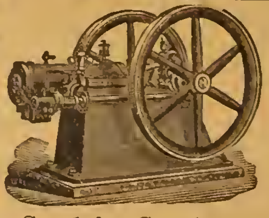
Killefer Clean Cut Weeder



Is just what the name implies. It is the most effective tool for keeping down the growth of weeds after rains or irrigating on orchard, beet, bean or grain land. It does twice the work of any other tool with the same power. The knives overlap so it is impossible to miss any weed. Built in 6, 8, 10 and 12 foot sizes. The patented knives are so formed that they wear uniformly from heel to point, causing them to wear twice as long as any other blade for the same purpose. It is ***the*** tool for weed killing on any kind of cultivated land. Blades can be attached to cut in or out as desired.

The Killefer-Griffith Mfg. Co., 1336 Palmetto Street, Los Angeles, Cal.

THE COLUMBUS



Gas, Gasoline and Distillate Engine

Embodying New and Important features in design and operation.

Send for Catalogue E. All information furnished. Address

Columbus Machine Company
121 So. Los Angeles St. Los Angeles Cal.

FINE CYLINDERS
DEEP WELL PUMPS
A. T. AMES, GALT, CAL
SHALLOW WELL PUMPS
CUP LEATHERS

CALIFORNIA
CULTIVATOR
DEVOTED TO
AGRICULTURE
IN ALL ITS BRANCHES

LOS ANGELES MAY 25, 1906 SAN FRANCISCO

PERCHERON STALLION BARNUM 40139 (51951)

First prize stallion, three years old and under four, at the International Livestock Exposition, Chicago, 1904, and the Illinois State Fair, 1904. Imported and shown by Dunham Fletcher & Coleman, Wayne, Du Page County, Illinois.

The American farmer has undoubtedly a monopoly of raising draft horses. Only a few countries can produce them. We have imported the great bulk of the heavy draft stallions from England, Scotland, France and Belgium, and as we begin to mature our high-grade American draft horses we find the whole world eager to get them. America is the only country that can increase the supply for export to supply the world's markets, hence the prices must advance as the demand continues to increase beyond the supply of heavy draft horses.

CALIFORNIA GAME LAWS.

The penalty for shooting at, killing or having in possession any protected game during the closed season is $25 to $500 fine, and imprisonment.

Meadow larks, robins and all other species of song and non-game birds excepting only the linnet. English sparrow, the blue jay and the cooper, sharp-shinned and duck hawks) are protected at all times by State law, together with their nests and eggs.

There is no open season in California for swans, pheasants, bob-white and imported quail, female deer, fawn, antelope, elk or tree squirrels. It is a felony to kill an elk and the minimum fine for killing female deer, spotted fawns, antelope and mountain sheep is $50.

It is a misdemeanor to take or destroy the nest, eggs or young of any protected species of game or non-game bird.

It is a misdemeanor to trap or otherwise capture, or have in possession trapped or captured birds, without a permit first having been obtained from the State Fish and Game Commission.

It is a misdemeanor to buy, sell, give away or ship out of the State any quail, dove, robin, meadow lark or other wild bird, or the skin, nest or eggs of the same.

Watch the liner column in the Cultivator. Every line of business is represented from time to time and our readers will find it will pay them to look over it for articles they may wish to purchase and also it will pay them well to advertise therein anything they may wish to sell. If a ranch is for sale or rent, machinery not needed or to be replaced by larger plants, a fine cow or bull for sale, anything wanted or to be sold, can be advertised to good advantage and quickly disposed of. Try a liner ad.

HENS THAT HATCH FISH.

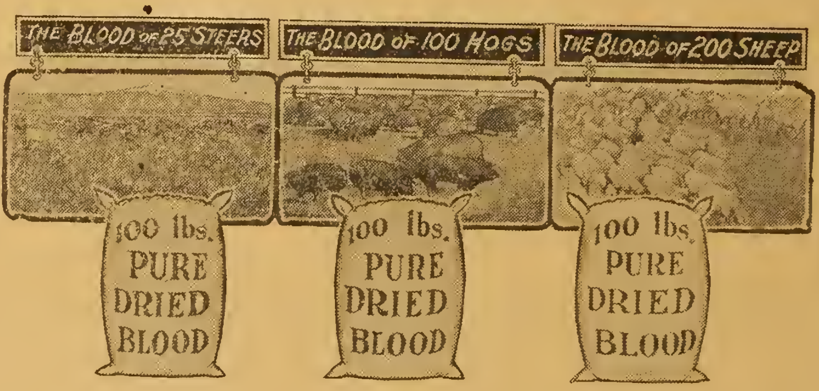
The Chinese are ahead of us in some phases of fish culture. They, for instance, can make hens hatch out fish. This is the way they do it: They take a hen's egg, withdraw its contents through a tiny hole, and substitute fish eggs. The opening in the shell is then closed and the egg is placed under a setting hen. The hen, suspecting nothing, welcomes the doctored egg, and in a few days the fish ova are so far advanced that the Chinese operator has only to break the shell in warm water and the little fish come to life at once. Some hens kick, hatching ducks, to see them take to the water. What must be the emotions of a Chinese hen when she hatches a lot of cold, wet fish?—Cincinnati Enquirer.

Real estate advertising appeals to home loving people and real estate agents are rapidly finding out that for country property either for sale or trade there is no medium better than the Cultivator. It reaches the special class who are interested in country homes as well as farms. Watch the liner column as well as the display announcements of large firms.

"Say!" demanded the ugly individual, suddenly appearing from a dark alley, "what time is it?"

"You're just about two minutes late," replied the Chicagoan. "That gentleman you see running away has my watch."—Catholic Standard and Times.

The Hearts and Blood of Half a Hundred Animals


THE BLOOD OF 25 STEERS
THE BLOOD OF 100 HOGS
THE BLOOD OF 200 SHEEP
100 lbs. PURE DRIED BLOOD
100 lbs. PURE DRIED BLOOD
100 lbs. PURE DRIED BLOOD

DID YOU KNOW?

It takes the blood of 20 steers, or the blood of 100 hogs, or of 200 sheep to make 100 pounds of pure dried Blood Meal. Therefore, pure dried Blood Meal is more valuable than people think it is. When you consider that it takes the blood from so many animals to make a single sack of dried Blood Meal, do you think you can buy pure, unadulterated Blood Meal for any such price as $3.00 per hundred pounds? Well, I guess not. If you get it for $4.25 per hundred pounds you are getting it cheap, and if you buy any grade of Blood Meal for a less price, you don't know what on earth you are getting.

THE BLOOD OF HALF HUNDRED ANIMALS

A pound of pure, dried Blood Meal is a more substantial food for flesh and egg making than any ten pounds of grain food, and yet, when you buy COULSON'S IMPROVED MASH EGG FOOD, you get a feed, a ton of which contains the cooked blood of HALF A HUNDRED ANIMALS, besides several hundred pounds of cooked Meat Meal, fresh ground Bone Meal, etc., all fine-ground into meal, and is so thoroughly mixed up by special mixing machinery with the richest grade of Middlings, Shorts, Cocoanut Meal, etc., so as to make a RICH, BALANCED RATION for making heavy egg-production.

NO WONDER THAT IT MAKES HENS LAY.

Is it any wonder that hens fed on this kind of feed will lay 200 eggs a year, or more? It's a mighty rich feed, and in order to assist the fowls to get the value from it, we mix a few ingredients with it, that will assist the digestion and assimilation of all the good things in the feed.

IGNORANT PEOPLE BUY CHEAP STUFF

Some poultrymen are using cheap Blood Meal that is adulterated with half tanbark (or other worthless material, of no use as food) which they could readily see if they only would know enough to LOOK at it.

And yet, they buy this cheap Blood Meal, and other fertilizer trash, and try to make Egg Food out of it, or mix up a feed of their own—and call themselves "SMART MEN." It's like a farmer trying to compete with a harvester, and who uses only a scythe and a rake.

When a poultryman buys COULSON'S IMPROVED MASH EGG FOOD, he gets a choice, rich feed, that contains GOOD, PURE, WHOLESOME INGREDIENTS that will do his hens good, and enable them to produce an abundance of eggs.

INTELLIGENT MEN, that's the kind that buy COULSON'S IMPROVED MASH EGG FOOD.

YOU LOSE MONEY ON UNHEALTHY HENS.

It pays to keep machinery in good order to prevent waste. It pays to keep your hens in order to prevent waste. Do you realize that a hen whose liver and working machinery is not in healthy condition, eats food which passes out of her without being half digested, just as whole grain would come through a dull mill, without being half ground?

GOOD FEED MAKES GOOD HENS.

It is on account of this waste that so many poultrymen remain poor; they do not realize that their fowls do not get two-thirds of the value of the feed. But when the hens are fed COULSON'S IMPROVED MASH EGG FOOD, they get ingredients mixed in the feed that put the hen's working organs in good condition, so that they can assimilate and digest the good materials that are in the feed, and make two eggs where they only made one before.

If anybody tells you that COULSON'S IMPROVED MASH EGG FOOD contains any trash, you can put it down, that either they have been MISINFORMED, or else, they are WILLFUL MISREPRESENTATIVES of the truth.

$300.00 FOR FEED—$900.00 WORTH OF EGGS.

During the past year (1905) Mr. J. Christensen, of San Luis Obispo, Cal., fed his flock of 300 laying hens on COULSON'S MASH EGG FOOD every day, and the total cost of all the feed used, during the year, was $300. He sold, during the year, $900.00 worth of eggs, making $600.00 profit.

5 WEEKS OLD CHICKS—3½ CENTS EACH.

Mr. Christensen hatched out 312 chicks, and fed them entirely on COULSON'S GROWING CHICK FOOD, dampened with a little milk.

He purchased 5 sacks of it, for which he paid $11.75. When the chicks were 5 weeks of age, he had 310 good, **strong, healthy chicks;** only two having died, and out of the 5 sacks of feed, he still had a bucketful left. So the cost of feeding them COULSON'S GROWING CHICK FOOD, up to 5 weeks of age, was about 3½ cents per chick, and raised 310 out of 312.

4 TO 4½ CENTS A MONTH TO FEED A HEN.

It costs 4½ cents a month to feed a hen COULSON'S IMPROVED MASH EGG FOOD, and it also costs 4½ cents a month to feed the cheaper feeds, as you have to feed so much more of them. By feeding COULSON'S IMPROVED MASH EGG FOOD, you will get the most eggs, not only now, but next July, and next October; and your hens produce for you, at least, $1.00 per year more profit than what they have ever done before.

ASK YOUR DEALER, or write to FACTORY.

1736 Berkeley Way,
Berkeley, Cal., April 3, 06.

Coulson Poultry & Stock Food Co.,
Petaluma, Cal.

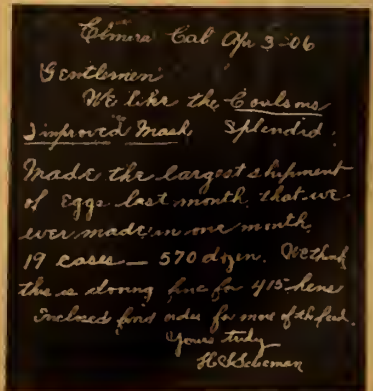
Gentlemen:—

I have been using your EGG FOOD for some two years, and will say that it has given me splendid results. My hens are in fine condition, and I can highly recommend the food.

Yours very truly,

(Signed) JOHN BARE.

P. S. We find the eggs from our hens are exceedingly fertile—from one lot of 200 eggs, I hatched 180 chicks.



Elmira Cal Apr 3-06

Gentlemen:

We like the Coulsons Improved Mash Splendid.

Made the largest shipment of Eggs last month that we ever made in one month, 19 cases — 570 dozen. We think that is doing fine for 415 hens

Enclosed find order for more of the feed.

Yours truly

H. S. Seleman

ASK YOUR DEALER OR WRITE TO

COULSON POULTRY & STOCK FOOD CO., PETALUMA, CALIFORNIA

CALIFORNIA CULTIVATOR

Vol. XXVI—No. 21 LOS ANGELES, CAL., FRIDAY, MAY 25, 1906 Subscription $1.00 a Year

Grains Used for Cereal Breakfast Foods

By Charles D. Woods, D. Sc., Director Maine Agricultural Experiment Station, and Harry Snyder, B. S., Professor of Chemistry, College of Agriculture, University of Minnesota

There is no part of the world except the Arctic regions where cereals are not extensively cultivated. From the oats and rye of the north to the rice of the hot countries, grains of some kind are the staple foods.

An idea of the importance of cereal foods in the diet may be gathered from the following data, based upon the results obtained in dietary studies with a large number of American families. Vegetable foods, including flour, bread, and other cereal products, furnished 55 per cent of the total food, 39 per cent of the protein, 8 per cent of the fat, and 95 per cent of the carbohydrates of the diet. The amounts which cereal foods alone supplied were 22 per cent of the total food, 31 per cent of the protein, 7 per cent of the fat, and 55 per cent of the total carbohydrates—that is, about three-quarters of the vegetable protein, one-half of the carbohydrates, and seven-eighths of the vegetable fat were supplied by the cereals. Oat, rice, and wheat breakfast foods together furnished about 2 per cent of the total food and protein, 1 per cent of the total fat, and 4 per cent of the carbohydrates of the ordinary mixed diet, as shown by the statistics cited. These percentage values are not high in themselves, but it must be remembered that they represent large quantities when we consider the food consumed by a family in a year.

The reasons for such an extensive use of cereal foods are not hard to find. Besides being cheaply and easily grown, the grains contain unusually good proportions of the necessary food ingredients with a very small proportion of refuse. They are also readily prepared for the table and are palatable and digestible. Owing to their dryness they are compact and easily preserved without deterioration.

The grain as it grows on the stalk is surrounded by a hull or husk, which is so indigestible that it is removed before the seed is used for food. Each grain has an outer skin or bran layer, which may or may not be removed in milling. It is nearly always taken off from rice and buckwheat, sometimes from wheat, corn, and rye, and almost never from the other grains unless the outer sections are ground off as in pearled barley. Grains simply hulled or husked and slightly crushed are called groats or grits; more finely crushed they are termed meal, and when ground into a fine powder and sifted they are known as flour.

Grains in the raw state are not usually considered pleasant to the taste and are thought to be difficult of digestion, and therefore cereals are almost always cooked before eating. The simplest and doubtless the oldest way of cooking them was by parching. This was frequently all that was done to the oats which the Scotch Highlanders took as their only provision in their border forays, or to the corn the American Indians used for a similar purpose. But other ways of cooking make the grain more palatable, and it is usually mixed with water or other liquid and either baked as bread and cakes or boiled or steamed as pudding or porridge. It is the use of cereals as porridge that is of special interest, as cereal breakfast foods are most commonly used in America for porridge making or as a substitute for porridge. When used in this form they are perhaps not as convenient to eat as bread, do not keep so well, and require long cooking, but in spite of these disadvantages porridge is much used the world over, and grains have been thus cooked since earliest times. Many varieties of porridge are found. Sometimes the cereals are simply boiled in water, sometimes with milk, or with meat or kale, as in Scotch brose. Welsh budrum is made from oats which have been allowed to ferment and are then cooked, and the Arabs have a similar dish, kouskous, made from fermented wheat. In the old-fashioned bag pudding of England, of which Christmas plum puddings are the direct descendants, suet and fruit were mixed with wheat or barley and all steamed together in a bag. The simpler kinds of porridge are, however, the most common, and it is from them that modern breakfast foods have been developed.

Egyptian Corn, Growing in San Joaquin County.
Sometimes Used to Adulterate Cereal Breakfast Foods.

The number and variety of cereal breakfast foods at present on the market are large, but the majority of them fall readily into one of three groups. The first includes those which are prepared by simply grinding the grain, the second those which have been steamed or otherwise partially cooked and then ground or rolled, and the third those preparations which have been acted upon by malt, which induces a greater or less chemical change in the starch present.

No class of foods is more extensively or ingeniously advertised than the cereal breakfast foods. The claims sometimes made for them are astonishing. Some of them are said to contain several times as much nourishment as the same weight of beef; others are lauded as especially valuable as brain food or nerve tonics, and very many are claimed to be particularly well suited for persons of weak digestion. Many of these claims are obviously preposterous, others are doubtless true, and still others contain an ingenious mixture of fact and fancy. Realizing that accurate information in regard to breakfast foods was needed, investigators at several agricultural experiment stations have recently studied their composition and food value, and it is now possible to make a number of definite and reliable statements about them.

* * *

Grains Used.—The grains ordinarily used in the United States for this class of foods are corn, oats, rice, and wheat; less commonly, barley; and in some sections wild rice. In other parts of the world millet, rye, buckwheat, Kaffir corn, and other cereals are cooked into porridge, but with us they are too uncommon to warrant extended discussion.

Barley, which grows in almost any latitude, is more commonly eaten in Europe than in the United States, but less now than in former times. Its chief use in this country is for making malt, though pearled barley is frequently put into soups and a few barley breakfast foods are seen. Some of these last, however, are not made from barley alone, but from barley mixed with other grains.

Corn (maize) is a native American cereal, and although used extensively in Southern Europe and parts of the Orient, is still most widely used in this country. Since earliest times corn bread of various sorts, corn mush, and other corn dishes have been popular in the United States, the proportion of corn eaten being perhaps larger in the Southern States than in the North or West. There are many varieties of corn, differing in form, size, and color, but the average chemical composition in all cases is much the same. The germ of corn is relatively large and rich in fat, which tends to become rancid in keeping and is therefore sometimes removed in preparing the more popular meals. The names for the different corn products vary in different parts of the country. In some sections the whole kernels are called hominy and the partially crushed ones samp, while in others exactly the reverse is true. The old-fashioned hulled corn is sometimes called lye hominy. In making this the skin is loosened by steeping the kernels in a weak solution of lye, which gives a peculiar flavor to the product.

Oats are distinctively a cereal of northern regions, and wherever grown are an important porridge staple. In old-fashioned oatmeal much of the husk, which adheres closely to the grain, often remained in the meal. This seems now to have been largely remedied by improved methods of milling, though some tough particles of skin are still left in the finished product. Nevertheless, when thoroughly cooked, oats are a healthful food, the widespread use of which is well justified. The oat breakfast foods keep better than similar products made from wheat and corn.

Rice, as everyone knows, is a staple food in all tropical and sub-tropical regions and is much eaten elsewhere. The unhusked grain is usually called by the East Indian name of paddy. The husk and dark inner skin require special machinery to remove them. In the East new rice is considered inferior to old. All agree that it should not be eaten until three months after harvesting, and many consider it best after it is three years old.

Wheat is the most important breadstuff, and in the United States is also an important breakfast cereal. The old English dish, frumenty, made by boiling the husked grains with milk and spices, seems to be about the only one in which the grain is used

Continued on Page 499

Deciduous Fruit Culture

BY J. W. MILLS, POMONA, CAL.

GIRDLING FRUIT TREES.

The Experiment Station Record relates how a number of eight year old apple trees were girdled as an experiment. The trees had never borne fruit and part of them were girdled and part left without the treatment. Both sets of trees bloomed full but soon after blossoming the ungirdled trees dropped their bloom and set little fruit. The reverse was true of the girdled trees. In one instance a girdled York tree produced nine and a half bushels of apples and an ungirdled tree alongside produced but one bushel. Attention is called to the necessity of observing carefully the healing process and see that the tree recovers properly. It is not stated how to overcome the difficulty in case the wound does not heal properly but we suppose that bridge grafting would have to be resorted to. This is done by taking new branches about the size of lead pencils, bevel both ends on the same side so that they will fit snugly down on the parts to be united by the bridge graft. Make a cross incision above and below the girdle so that the ends of the scion may be inserted and the ends of it run under the bark at each end at least three fourths of an inch. This may be done by bowing the scion in the center when inserting it. Bind the parts with waxed cloth. We give these instructions for the benefit of those who may wish to try the experiment, and over do it. Our advice would be to experiment on some trees of little value, some poor varieties, before trying trees that give promise of being choice. The removal of a ring not wider than one sixteenth of an inch and from that to one-fourth of an inch might be a good series of experiments. The behavior of the trees would give some key for future work. We would suggest that simply cutting around some branches without removing the bark would be a good experiment that would neither scar or permanently injure the tree. This might be repeated a number of times till the fruit is set, should the process have any such effect.

The article states that the fruit was much more highly colored on the girdled trees than on the others. Nothing is said about the quality of the fruit. It may prove to be of doubtful advantage as it is very likely that the quality of the apples would be impaired. We found this to be the case with an experiment with a peach tree on which we girdled a branch. The peaches on that branch ripened fully a week earlier than they did on the balance of the tree, were just as large, much finer in color but much inferior in quality. They lacked acid and were very insipid.

* * *

HIGH OR LOW PRUNED APPLE TREES.

An apple bulletin published by the Oregon station states that it has been discovered that in western Oregon, low pruned apple trees produce fruit of poor color while high pruned trees produce fruit of fair to high color. Here is an idea that may be of value to California growers. Has any one in the apple growing sections of this State noticed any such thing?

PHOSPHORIC ACID AND GRAPES.

The Experiment Station Record prints the result of an experiment made in France where certain amounts of superphosphoric acid were applied to wine grapes with the result that where 270 pounds of superphosphate were applied to a certain area, the wine made from the grapes contained ten times as much phosphoric acid as wine made from the same kind of grapes grown without any superphosphate. The experiment is valuable in showing that we might expect phosphoric acid to have a decided effect on fruit itself. This has been claimed for that element but unfortunately few conclusive demonstrations have been made to growers. This example is a very striking one.

ROOT PRUNING.

Editor Cultivator: In your "Queries Column" of May 4th on Orchard Pruning, you say that root pruning promotes the growth of fruit bearing wood. How should root pruning be done and at what time of the year?

I have quite a number of Bellefleur apple trees, twelve years old, the pictures of health, and every spring they seem to take on such a speedy growth that they throw off the fruit and grow wood and from all I can learn, these trees need root pruning. The gophers have never had a free run in my orchard and strange to say, one of the worst gopher infested orchards that I know of, invariably has a big crop of apples. I am inclined to give the gophers a clean run, only I haven't much faith in their knowledge of where to cut, so when would you cut the roots and how?—J. M. C., Lompoc.

While your trees are surely old enough to begin business, they are evidently laying a good foundation for heavy future crops, provided they were propagated from prolific stock. If such is the case they will no doubt make up for lost time. In the meantime, though, root pruning may be of value to you. In another column is an account of some experiments made with girdling apple branches which resulted in heavy crops. We think these experiments should be made on a small scale as no two sections can be counted on as giving parallel results. It may be that girdled tree or branches will produce prematurely ripened fruit which would be disastrous to winter varieties of apples, though desirable for summer sorts.

Root pruning should be done during winter time or in the spring when the plowing is done, and before pruning. Plow deeper than usual but not close enough to the trees to sever large roots. If you cannot reach a reasonable number of roots with the plow, run a subsoiler through the space distant between the trees, deep enough to cut a good many roots. Of course you understand that such operations are mostly guess work unless considerable digging is done, but results will finally give you a reliable guide. Try a couple of rows with the subsoiler crosswise. This will root prune that many trees on all four sides. We would like to have you report to us on the results obtained if you carry out this suggestion.

Fruit buyers are offering 9 cents for dried apricots around Hanford

DECIDUOUS FRUIT HIGHER THIS YEAR.

The rains which have occurred so plentifully during the past month have done a good deal of damage to fruit and the prices should be very much higher this year than last. In all the apricot growing section of the State north of the Tehachapi the trees had put forth green leaves prior to the first of March with no sign of bloom, although of course the bloom usually precedes the leaves. The apricot crop will not exceed one-fourth of a usual crop and reports are that prices of extra standard grades have advanced 20 cents a dozen as a result of the poor prospects for this year's crop. The weather in California last month has been an almost exact repetition of that in March, 1904, and it will be remembered that in that year the great Sacramento valley, where most of the peaches are grown, produced but one-tenth of a crop.

The pear blight will of course make a much shorter crop than that of last year for as yet no remedy for it or any agency for checking it has been discovered. In view of those facts the outlook for California canned goods the coming season, in my opinion, is discouraging, and it is too bad, for elsewhere in the country poor crops are promised. There will be no peach crop in Texas, and few if any peaches in Arkansas, Missouri and Kansas.

Jobbers throughout the middle west are carrying lighter stocks of California canned goods than for years, and stocks on the coast were never so closely cleaned up as at present. The entire country West of Pittsburg is buying more or less of spot fruits particularly apricots and peaches and the country was never in better shape to take hold of California canned fruits than it is now.—D., San Francisco.

FIGHTING CATERPILLARS.

A correspondent writing to the Pajaronian, describes his successful fight against caterpillars as follows:

"I procured ten gallons of crude oil, into a part of which I put about twenty, out of 300 pieces of burlap or barley sacking, cut about eight inches or so wide by about three feet in length, which, after lightly squeezing the superflous oil out of them, one by one, I put into an empty barley sack, for ease in carrying from tree to tree. (apricots.) I folded the pieces of sack in strips about three or four inches wide and tied them around the trunks of the trees. I watched the vain attempts of the pests to cross these bands of saturated cloth; watched them come in contact with the oil at the lower edge of the cloth; watched them raise their heads and bodies, tainted with oil, writhing back and forth, finally turning a complete somersault backward, falling to the ground either to perish or retreat. Thusly I saved all of my fruit at a very slight expense and at a great profit."

PROSPECTS FOR CROPS.

The prospects are good for large fruit shipments to the East during the season which has just opened. Fully 7000 cars of green fruit and grapes will be sent east of the Rocky Mountains before the season closes next fall. This volume of business will mean between $10,000,000 and $12,000,000 to the California orchardists.

The cherry crop throughout the State is splendid and shipments are now going forward rapidly. The peach pear, and apple crops promise large yield, particularly of apples and pears. Grapes give promise of a big yield. Apricots and plums do not promise well. What is lost by these will be more than made up, it is said, on pears, apples and grapes.

Bishop Joseph Wilmer of Louisiana and Bishop Richard Wilmer of Alabama, are cousins and intimate friends. In their travels in Italy one summer, the Bishop of Alabama was pointing out with enthusiasm certain architectural beauties. The Bishop of Louisiana was bored. He said: "It's all very fine, Cousin Dick, but, nevertheless, a rich field, fragrant with the odor of new-mown hay, would please me better." And the Bishop of Alabama replied: "Cousin Joe, there's not a donkey in all Italy that would not agree with you."

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Practical Farm Science

BY PROF. A. J. COOK

CALIFORNIA AN IDEAL SECTION FOR QUEEN BREEDING

I am glad to see from an adverisement in the Cultivator, that we ave queen breeders in California. I ee no reason why California should ot be an ideal locality for such work. We have such an equable climate that here will be few or no shocks to weaken the bees, so we ought to get he very best results in our efforts to breed the best. It would also be posible to secure very early queens. The bees often get much honey from the orange bloom which opens in midwinter. Thus at this early season, the beekeepers could arrange not only to start his queens but to breed them. There is, and always will be, a demand for early queens. Thus California stands away in the lead as a most desirable section for queen breeding. It ought not to be difficult to find a section, possibly in the Imperial or Coachella valleys, where one could have entire control of all the bees, and so be able to regulate mating or selection of drones as well as queens.

* * *

MORE THOROUGH CULTURE

From what I have learned since I left California last summer I believe there has been far more cover crops grown in the orchards the past winter than ever before. In young orchards where water is plenty, this important work need not cease with the winter. I am sure that this practice will be attended with most satisfactory results. I hope that every one of our readers who is caring for a citrus orchard, will adopt the practice of deep cultivation at least on a small area and also of deepening the furrows in his irrigation so that the top soil is not made wet. I believe a little practice of this kind would soon convince any orchardist, and very likely through him, his neighbors, of the desirability of this better culture.

* * *

CITRUS FRUIT IN EUROPE

Citrus fruit, like honey, is not only very inferior as sold in the markets of Europe when judged by the California standard, but is sold at a high figure. I have just heard from letters received from home that there is more of the spirit of co-operation and combination among our California citrus growers than ever before. I hope this will be carried so far as to make a successful effort to market our fruits over the seas. I believe this is possible. California should sell immense quantities of fruit on this side of the big pond.

A FEW POINTS FOR BEGINNERS.

One without experience should not start in apiculture with more than five colonies of bees and the hives and implements necessary to handle them.

Buy your bees as close home as possible, providing you get them cheap enough.

Select colonies strong in bees, housed in a well constructed hive of standard size, the hive that is used largely by bee keepers in Europe and America is the Langstroth hive. It is recognized as a standard size and is used by nine-tenths of the bee keepers all over the world.

Make sure the combs are straight (crooked combs depreciate the value of a colony greatly.) See that they have sufficient honey to last until new honey is coming in.

They should have a good, vigorous queen and if they are blacks or hybrids it will pay you to get a good strain of Italians from a queen breeder.

The best time to buy bees is in the spring, about the time of fruit bloom, as then the colonies being light in weight are more readily moved.

Moving Bees.—After you have bought bees, the next important thing is to get them safely home. Bees may be moved any time of the year. During the fall or spring, when the days are cool, they can be moved with the least expense and trouble. It is always better to go about this carefully and correctly, as follows: Take off the hive cover; tack a wire cloth over the entire top of hive, and if the day is cool, stop up the entrance entirely, but if the day is warm, cover the entrance with wire cloth, close the entrance after dark so as to be sure the bees are in the hive. Next use an easy riding vehicle for hauling the bees, and drive so as to avoid any jerks or drops as a quick, hard jar is bad for the bee comb at any time or place.

After you get your bees home, put them into the place, which you should have prepared beforehand, and open the hive entrance at once, but provide yourself with a bee veil and blow a little smoke into the hive entrance. Do not have any horses or live stock near, as they are liable to get stung.

Location of Apiary.—Any place where there is an abundance of honey bearing plants, and which is not over stocked already, is suitable for the location of an apiary. A locality sheltered from high winds should be given the preference and if shade from a few fruit trees can be had, so much the better.

Face the bees to the south or southeast, if the surroundings allow it. Arrange a solid place for each hive to stand on, four or five inches from the ground. I use bricks for this purpose, but stakes driven into the ground and sawed off square, will do just as well, you can get especially constructed hive stands, but they are expensive.

Make sure each hive is level sideways, and a little lower in front to keep out water.

Keep grass and weeds down in front of hives.—M. D. Whitcher.

REMARKABLE HONEY CURE.

We find reported in the Schweizeische Bienenzeitung a case showing the efficacy and medicinal value of honey. A young woman was suffering from a very severe form of anaemia, and the eminent Dr. K—— at last told her that nothing more could be done for her, and that she could not live long, but without holding out much hope for her recovery, he recommended her to try honey and milk. She was to take this several times a day, and take walks in the woods, so long as she was strong enough to do so. She carried out his advice and in a few months became perfectly well and strong again. This is an example where honey has been the means of rescuing a life from the grave and should be an incentive to the more liberal use of honey as an article of food.

OBSERVATION HIVE.

A contemporary says: The queen bee is carefully watched, guarded and fed by a small band of workers, who are ever ready to administer to her wants. Another band of bees, called waxworkers, hang for hours in a long string, so to speak, while thus engaged. Still another band of bees shape and make cells, from the bright kinds of pollen brought in by the field workers. Other bees work with the honey, changing it about until it is in condition to cap over, ready for market. Other bees watch the temperature of the hive, guard and protect the entrance to the hive from the robber bees.

THE SWARMING SEASON.

Perhaps the most interesting season of the year for the bee keeper is the swarming season. Every wideawake bee keeper is anxious to increase his stock of bees by natural swarming. All beekeepers delight in the pleasing excitement of natural swarming—it is a most beautiful sight to witness a swarm of Italian bees as they emerge from the hive—their bright golden wings glistening in the rays of the noonday sun, making a picture never to be forgotten.

FASCINATING WORK.

To my mind, says a writer in an exchange, there is no occupation so interesting and enjoyable as that of bee keeping. Every school boy or girl should have a colony of bees to work with. In a few years they would not only become expert beekeepers, but make more than enough money to buy all their clothing. Parents should give the boy and girl a chance to earn their own living in this way. They would soon be on familiar terms with the bees and learn to handle them as easily and as safely as a pet canary bird.

She had been for a drive with a young man friend, and when she returned she was glowing with excitement.

"Oh, dear, mother," she cried. "Tom and I had the very narrowest escape from an awful accident! The horse very nearly bolted. We were going through Swan lane, when all of a sudden a pheasant got up from the hedge and frightened the horse, and if Tom hadn't made a dash for the reins"—

"Eh?" said her youngest brother, suddenly. "How's that? Why wasn't he holding them?"

And it took at least five minutes to explain.—London Tit-Bits.

As a rule the man who lives slowly lives long.

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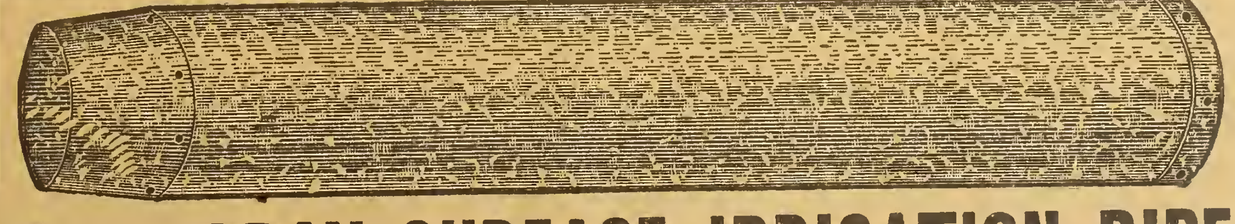

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Citrus Fruit Transportation

Report of Investigations by C. Harold Powell

Riverside, Cal., May 17, 1906.

A summary of the principal points of the investigation of the causes of decay in oranges in shipment in 1906, by the Bureau of Plant Industry, U. S. Department of Agriculture.

The loss from decay in oranges in 1905 amounted to $1,000,000 or more. The decay is caused by a common mold which usually enters the fruit through an abrasion in the skin or else enters an orange that has had its resisting power weakened in some other manner. More than half the decay in the eastern markets can be readily traced to mechanical injuries in the skin of the fruit. Moist warm air provides ideal conditions for the growth of the decay. Cold air or dry air may prevent the germination of the mold spores and retard the growth of the disease if it has already started. It is unusual for decay to appear in a clean, sound orange even under adverse conditions.

The investigation in 1906 has covered the following field:

1. The mechanical injury in picking the fruit and the damage done by handling it in packing house.
2. The decay in sound unbrushed, brushed and washed fruit, and in fruit all of which has been injured by the clippers in picking, by stems puncturing other oranges or by abrasions of other kinds.
3. The decay in sound unbrushed, brushed and washed fruit in the coast, mid-valley and upper San Bernardino valley regions.
4. The decay in New York in sound unbrushed, brushed, washed, and in mechanically injured fruit shipped under ventilation, under icing, and under precooling. In the last method the fruit is cooled to 35 to 40 degrees Fahr., in a cold storage warehouse before shipping, and is then forwarded under icing.
5. The decay in New York in sound unbrushed, brushed, washed, and mechanically injured fruit delayed from one to seven days after packing in the packing house.
6. The distribution of decay in the car in unbrushed, brushed, washed, and in imperfect fruit when shipped to New York.

* * *

Clipper Cutting.—The average injury from cutting the orange with the clippers or shears in severing it from the tree has been about 5 to 8 per cent in 1906. In 1905 it averaged 15 to 20 per cent. The injury seems to be reduced to a minimum when the picking is done by trained gangs of men under the control of the packing house, or when the packing house employs an inspector to guard the different growers against this type of injury. The injury appears to be more common when the fruit is picked by the box and when the pickers are not under careful supervision. The oranges delivered to a packing house by different growers may vary from 1 to 40 per cent in the amount of clipper injury, and a similar variation is common in the fruit picked by different men in the same grove. In several of the largest interests in California this type of injury has averaged not over 2 per cent in 1906.

* * *

Stem Puncturing.—The average injury from stem puncturing has probably not been greatly reduced in 1906. This type of injury is the result of leaving the stem of the orange too long. It has averaged not over 2 to 3 per cent in large interests which have handled the fruit (with great care, but it often runs as high as 20 to 30 per cent. There is usually from 2 to 4 times as much stem puncturing in washed as in dry brushed fruit. Stem puncturing is caused most commonly in the grove in dropping the fruit into the picking bag, and in pouring it into the boxes. In the packing house it is increased by steep gravity runs, by the oranges dropping into the bins, by washing the fruit and by other forms of rough handling. It is most severe in packing houses with overhead, complicated machinery, and in all houses in which the machinery is run at a high rate of speed. There are other common forms of mechanical injury such as gravel punctures in the oranges in the bottom of the picking boxes, finger nail cuts and punctures and abrasions caused by incidental disorders in the packing house machinery.

* * *

Decay in Unbrushed, Brushed, Washed and Imperfect Fruit.—An average of a large number of tests made in all parts of the orange district with oranges held two weeks in warm, moist rooms, or under the most favorable conditions for decay, gives the following approximate results:

Unbrushed fruit apparently free from mechanical injuries, 1.5 per cent decay.

Brushed fruit apparently free from mechanical injuries, 4 per cent decay.

Washed fruit apparently free from mechanical injuries, 12 per cent decay.

Mechanically injured fruit (clipper cuts, punctures, etc.), 36 per cent decay.

The unbrushed fruit from the coast to the upper San Bernardino valley has averaged from 1 to 2 per cent decay in all places; the brushed fruit from 3.5 to 4.5 per cent, and the washed fruit from 11 to 12.5 per cent. Similar treatment in handling has produced similar results in all sections.

Shipping Tests. Ventilation—When shipped quickly after packing under ventilation to New York the decay in twenty cars of fruit forwarded from the last of February to the middle of April was as follows:

Unbrushed fruit apparently free from mechanical injuries, 1.5 per cent.

Brushed fruit apparently free from mechanical injuries, 1.5 per cent.

Washed fruit apparently free from mechanical injuries, 4.5 per cent.

Mechanically injured, 17 per cent.

Icing—When shipped quickly after packing under icing to New York (forwarded from March to May) the decay in about 35 cars of fruit has been as follows:

Unbrushed, apparently free from mechanical injuries, 0.1 per cent.

Brushed, apparently free from mechanical injuries, 0.5 per cent.

Washed, apparently free from mechanical injuries, 2.7 per cent.

Mechanically injured, 6 per cent.

Precooling—When shipped quickly after packing at a temperature of 35 to 40 degrees Fahr. and iced regularly in transit the oranges of all grades have arrived in New York practically sound. The decay in the imperfect and washed fruit has only been retarded under this method of shipment. The mold spores have not been killed. The fruit that would have rotted under ventilation or under icing is likely to decay as soon as it warms up. There is a double advantage in having clean, sound, unwashed fruit to ship. First, it carries well under all systems of shipping, and second, it is more likely to remain sound on arrival in the distant market.

* * *

Delayed Shipments—When brushed, washed and mechanically injured fruit has been held in the packing house, one, three, five and seven days after packing, and then shipped under icing to New York, the decay in all grades in ten cars was as follows:

Shipped the day of packing, 2 per cent.

Shipped three days after packing, 5 per cent.

Shipped five days after packing, 10.5 per cent.

Shipped seven days after packing, 11 per cent.

The delay in shipping affects the brushed, sound fruit least, and the mechanically injured fruit most, as may be seen from the following data taken from fruit shipped, under icing, from the same house in April:

Time of delay before shipping, 1 day: Brushed, 0 per cent; washed, 3.1 per cent; injured, 3.2 per cent; total, 6.3 per cent.

Time of delay before shipping, 3 days: Brushed, 2 per cent; washed, 3.3 per cent; injured, 4.3 per cent; total, 9.6 per cent.

Time of delay before shipping, 5 days: Brushed, 2.5 per cent; washed, 7 per cent; injured, 19 per cent; total, 28.5 per cent.

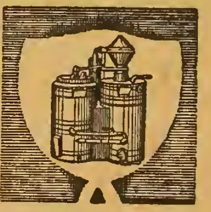
Time of delay before shipping, 7 days: Brushed, 5.4 per cent; washed, 7 per cent; injured, 19 per cent; total, 31.4 per cent.

In an iced car the decay is more serious in the fruit in the top tier of boxes, as the fruit cools more slowly than the oranges in the bottom tier of boxes. Sound brushed or unbrushed oranges appear to carry nearly equally well on both tiers. There may be two to four times as much decay in the top tier in washed fruit, and a still greater difference in oranges that are mechanically injured.

In precooled fruit the temperature of the car is more uniform from the top to the bottom. There is little difference in decay in the fruit in the two tiers of boxes. There is usually, though not always, a little more decay in the fruit in the top tier of boxes in cars shipped under ventilation as the air is warmer on the average in the top of the car.

These results, as far as they go, appear to indicate that the fundamental requirements for the successful shipment of the orange are that the fruit should be delivered to the packing house free from scale and free from mechanical injury, it should be handled in a packing house with enough care to prevent mechanical injury, and it should be shipped quickly after picking at the coolest practicable temperature. As conditions vary from these fundamentals the probability of loss from decay increases.

G. HAROLD POWELL,
Pomologist in Charge Fruit Transportation and Storage.
A. V. Stubenrauch, Special Agent.
L. S. Tenny, Assistant Pathologist and Pomologist.



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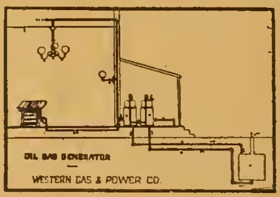

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With the Citrus Growers

BY J. W. MILLS

ORANGE GROWERS ENEMIES

The troubles that have beset the orange growers of California since the industry has become of commercial importance, would have knocked the last vestage of life out of it had they all or even half of them come at one time. The contemplation of them is enough to make a small grower dizzy. Every once in a while some long fought foe seems to be on the decline but usually it keeps up its tantalizing efforts. The black scale that has caused so much expense seemed doomed at one or two periods but he has come out ahead in the struggle so far and how much longer he is going to keep it up is a matter of conjecture. It was with fond hopes that we looked upon the scutellista but he has proven a wise manager and always leaves enough scale running around to insure him a bountiful supply of good fat scales for the future seasons. At least that has been his record in the largest orange growing districts of California. The scutellista has been strongly intrenched in our scale infested orchards for two or three years, but as long as we have to fight the scale to keep our fruit clean, what good is he anyway? If he would only leave the scale alone, no doubt there would be some colonies of scale that would become so dense that an epidemic would break out and give us a new disease to inject into the rest of them. As it is, Mr. Scutellista keeps the scale thinned out and scattered just enough to keep them big and healthy.

We noticed last fall that fully 95 per cent of the black scale on some of the worst infested trees that we ever saw, had holes in the backs, made by the scutellista and still there were plenty of young scales scattered over the trees. We recently asked an entomologist of note, why this was so. He said that the scales are too healthy for the scutellista and produce more eggs than the larva can eat. So it seems that we have not yet solved the problem of cheap eradication of the black scale.

Now comes the question of which is the best, spraying or fumigation. This we cannot answer now but hope [illegible] a census on this at no distant time. Of course we will keep an eye open for some parasite that will get in and clean up after the scutellista or do the work without his help.

ABOUT BUDS.

We unfortunately did not get our copy in in time for the issue of the Cultivator for May 20th and the editor was compelled to use other matter which had one time been prepared by another writer on the subject of budding over old orange trees. This writer advocated using active buds from suckers where the bark on the trees to be budded is thick and heavy. Now I do not agree with this. In the first place a bud that grows on a well rounded fruit bearing branch has as much vitality as any bud. It may not start to grow as quick as a sucker bud that is just ready to burst open, but it will fill its place. The most important point though is that a bud from a fruit bearing branch is more desirable than one from a vegetative branch. The sucker that comes from an orange tree is more liable to produce sports than shoots coming from branches that are producing an established style of fruit. The reason perhaps is that the forced growth of the sucker offers a better chance for the accentuation of strong tendencies. Aside from any and all theories, it is better to propagate from what we have strong evidence as being good than to take from that which is uncertain to a greater degree.

* * *

NEW ORANGE PROBLEM.

Men who have been in the business of growing oranges almost from the beginning of the industry in this section, state that the growth this year, after the fruit colored in the fall, has been greater than ever before. Therefore it is probable that so marked an increase in the size of the fruit will not occur again in a number of years. But it is likely to occur, and it is pretty certain to prevail in some degree with increasing frequency.

This, then, has brought a new problem into the business. The early shipments of fruit have run too much to small sizes to command the highest prices. And, because of the very great growth this year after coloring, the late shipments have run too much to excessively large sizes to bring the best returns. This has led to a study of the problem with a view of overcoming this difficulty, if possible, and there seems to be but one practical way of doing it. This is by taking care in the early packing to remove only the largest fruit, leaving the smaller ones until later. The tendency has been with many who have shipped early to gather all the fruit as soon as it was sufficiently colored—if indeed they waited for it to color well—stripping the trees of the whole crop. If the fruit is to increase at all in size after coloring it would be far better to have the smaller sizes left for this enlarging process, thus avoiding off sizes at both ends of the season.—Redlands Facts.

FARMER AND NURSERYMAN.

The farmer is the nurseryman's best customer. Doubtless farming communities appropriate ninety per cent. of all the products of tree nurseries. Seventy-five per cent. at least, of this amount is literally wasted. Take the patronage of the farmers of our land off the list of customers, and our commercial nurseries could not long survive.

For this and other reasons the nurseryman should be especially interested in the farmer's attempts to make a profitable use of the trees and plants that have been placed in his care. When we take into account the immense amount of trees and plants that are annually dealt out to the farmers of our country by the commercial nurseries through their agents, and then we pass over and through our great State and note the absence of orchards of any comparative value, while many farms are totally destitute of what ought to be considered a necessity in the matter of fruit supplies for the family, such conditions not only call forth astonishment but also excite regret and pity in behalf of the planter and his family in the loss sustained and in the disappointment arising out of misdirected effort, as well as from the results of wanton negligence.

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First National Bank, Los Angeles, Cal.

The Ornamental Garden

BY ERNEST BRAUNTON, LOS ANGELES, CAL.

LIPPIA REPENS.

If you want something that will carpet the ground quickly, that will make a thick matting very pleasant to walk and roll upon, that will keep green winter and summer, and that will need very little watering to keep in good shape, plant Lippia repens. It is a trailing perennial, which does not die in patches, like some of the ice plants used on terraces do, but grows thicker and thicker, as it becomes older. It will not become a pest, like the Bermuda grass because it has no underground runners, but runs only on the surface of the ground; the rootlets that start from every joint go down perpendicularly, but have no reproductive buds themselves; consequently a spade inserted a few inches under the surface of the ground will take up the whole mass, if needed. It will do very well without mowing, as it will never grow over six inches high; but, if it is not much walked over, and if you want a very even surface, mowing and rolling will improve its looks.

A FINE TREE.

Mr. Geo. H. Rogers of Riverside sends us some kodak views, showing a symmetrical and very handsome pink crape myrtle, a beautiful shrub and extensively grown in Southern California. He says: "The symmettrical shape is obtained by trimming back in the winter months when dormant and it can be done severely if desired without any fear of injury, as it never dies back."

We have often recommended the more extensive use of this small tree, not only upon our residence grounds but to complete the street planting of palms and their fitting accompaniments. The tree is quite hardy and is grown in many eastern states, being a success everywhere.

SODDING TERRACES.

Upon terraces and banks where grass cannot be readily established from seed or by planting, with any success, the sod or turf is usually removed from some area where suitable grass is well established and used to cover the entire surface of the bank or terrace. A common method employed in this work is to cut the sod into pieces a foot square and about 2 or 2½ inches thick. This answer well upon small areas if the sod is cut to a uniform thickness and the surface of the ground is made very smooth; otherwise there is more or less difficulty in getting the squares of sod adjusted evenly so as to produce a smooth surface. Considerable ramming or pounding is necessary in order to establish the desired smoothness, unless great care is exercised in cutting the turf to a uniform thickness [illegible] viding a smooth surface [illegible] upon. After the strips of turf have been cut they are rolled into rolls of convenient size for handling and the sodding is accomplished by unrolling the turf over the area to be grassed. After placing the sod in position it is thoroughly rammed down with a heavy wooden maul or pressed down with a lawn roller in order to produce a uniform and smooth surface.

In arranging your garden, try to have it so there will be a succession of bloom.

THE WHISTLING TREE.

A species of acacia which grows very abundantly in Nubia and the Soudan is called the "whistling tree" by the natives. Its shoots are frequently distorted in shape by the agency of larvae of insects and so swollen into a globular bladder from one to two inches in diameter. After the insect has emerged from a circular hole in the side of this swelling the opening played upon by the wind becomes a musical instrument nearly equal in sound to a sweet-toned flute. The whistling tree is also found in the West Indian islands. In Barbadoes there is a valley filled with these trees, and when the trade winds blow across the island a constant, moaning, deep-toned whistle is heard from them, which in the still hours of the night has a very weird and unpleasant effect.

VITALITY OF TREES.

An illustration of the wonderful vitality and reproductiveness of the redwood is reported from Ukiah as existing in the forests of Mendocino county. It consists of the trunk of a red wood tree felled for the manufacture of shingles, which after lying on the ground undisturbed for several months sprouted a number of young trees, whose roots had developed in its own body.

Travelers through the coast forests have frequently observed the phenomenon of rows of well developed trees growing out of the bodies of those that have lain long enough on the earth to perish and decay. Some years ago a newspaper correspondent reported the strange phenomenon of new redwood growth on a bridge built of redwood logs across a Humboldt county stream.

The sides of this bridge consisted of two large redwoods which had been felled so that the ends rested in the soil on each bank. All along the upper side of each log a row of sturdy redwood saplings developed shortly after the bridge had been finished.

COOLNESS OF TREES.

It is not shade alone that makes it cooler under a tree in summer. The coolness of the tree itself helps, for its temperature is about forty-five degrees Fahrenheit at all times, as that of the human body is a fraction more than ninety eight degrees. So a clump of trees cools the air as a piece of ice cools the water in a pitcher. That is why the legislature has authorized the park authorities of New York City to plant trees in the tenement districts If the air can be made cooler and purer by the trees, fewer children will die of heat ailments.

THE COCOANUT.

The cocoanut tree is the most useful of all plants in the tropical region. Its seed furnishes food and an intoxicating drink. The shell gives drinking cups and vessels and a hard material capable of a high polish, from which personal ornaments may be manufactured. The trunk furnishes wood for dwellings and boats. The leaves make clothing, cordage, and ropes. The fibres of the bark and of the nut afford matting and carpets. The buds furnish a succulent vegetable, and from the trunk a palatable liquor is drawn by making an incision.

INDIA RUBBER TREE FRUIT.

The fruit of the India rubber tree is somewhat similar to that of the Ricinus communis, the castor oil plant, though somewhat larger. The seeds have a not disagreeable taste and yield a purplish oil. It is a fairly good substitute for linseed oil, though it dries less rapidly. Mixed with copal blue and turpentine, it makes a good varnish. The oil may be also used in the manufacture of soaps and lithographic inks. The seeds are somewhat like tiny chestnuts, although darker in color. The Indian girls are fond of wearing bracelets and necklets made of them.

THE CALIBAR BEAN.

The famous Calibar bean is said to be worse than strychnine. The natives use it for an ordeal. If a person is accused of a crime he is made to eat one, being adjudged to be guilty in case of death which is almost inevitable. Another seed employed for a like purpose is that of the ordeal tree of Madagascar, said to be the most deadly of vegetable products. One of these seeds about the size of an almond will kill twenty men.

HARDY ANNUALS.

Hardy annuals can be sown at any time and it will be a good plan to ask the seedsman when buying, as to the best varieties to sow at present. Sweet peas should be sown during the winter months, as they bloom much better and with larger flowers and better foliage, than if sown too late.

COMMON NAMES FOR PLANTS.

To many the names of some plants seem cumbersome and unpronounceable, and the question is frequently asked: What is the common name? A difficult question to answer in all cases, as the common name in the localities where they grow is sometimes more difficult to remember than most people imagine. Besides many plants are too rare to have received common English names.

OUR BEST CLIMBER.

Bougainvillea spectabilis var lateritia, known in plant circles simply as B. lateritia, is a great improvement in color over all other species and varieties yet introduced. The old well-known kinds are all some shade of magenta, while B. lateritia is an orange red and therefore matches almost any color of house paint, an effect almost impossible with magenta.

PEPPERMINT.

The preparation of peppermint is especially an American industry. The peppermint is cut when in bloom, like hay, dried, placed in close wooden vats and steamed. The oil cells burst and the oil passes upward with the steam, which is condensed and conducted into a receiver, where the oil rises and is piped off. It takes about 350 pounds of dry peppermint to produce one pound of oil. An acre of land yields from six to ten pounds of oil, often more, even as high as fifty pounds.

HONEYSUCKLE FOR BANKS.

Upon steep banks which are of a sandy nature, and under conditions where it is difficult to use sod, a pleasing appearance can be produced by the use of Japanese honeysuckle (Lonicera japonica). This plant is capable of establishing and maintaining itseslf under adverse conditions, and it makes a good soil binder and has the advantage of being evergreen.

HIS "CHARACTER."

There is story told of a Scotch gentleman who had to dismiss his gardener for dishonesty. For the sake of the man's wife and family, however, he gave him a "character," and framed it in this way: "I hereby certify that A. B. has been my gardener for over two years, and that during that time he got more out of the garden than any other man I ever employed."

"Spake full well in language quaint and olden,
One who dwelleth by the castled Rhine,
When he called the flowers so blue and golden
Stars which in earth's firmament do shine."

By measurement it has been proved that the flower stem of a century plant grows from six to twelve inches per day, according to soil, climate, etc.

IT'S PENNY WISE

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In the Vegetable Garden

BY ERNEST BRAUNTON

VALUE OF BEANS AND PEAS.

Fresh string beans, sugar peas, and shelled peas, like other fresh, succulent vegetables, contain considerable water, which, with the materials dissolved in it, forms the plant juice. They somewhat resemble cabbage in percentage composition. Fresh shelled beans, peas and cowpeas contain a fairly large amount of protein or nitrogenous material, the nutrient which serves to build and repair body tissue as well as to furnish energy. They also contain considerable carbohydrates and small amounts of fat, both these classes of nutrients serving to supply the body with energy. The amount of ash or mineral matter in the legumes varies in amount. It doubtless serves the same purpose in the body as mineral matter found in other food materials. The canned legumes, which are simply cooked foods sterilized and kept in such a way that they can not ferment, resemble in composition the same materials uncooked. The dried legumes contain some water, though to the eye they seem to be perfectly dry. They contain a high percentage of protein, in this respect surpassing the other seeds commonly used as food, such as wheat. They approach animal food as regards protein and total nutritive value, most of the legumes containing carbohydrates in place of the fat found in animal foods. Fats and carbohydrate, however, serve the same purpose in the body, although the fats yield two and one-forth times as much energy per pound as carbohydrates.

DIGESTIBILITY OF PEANUTS.

The peanut is remarkable among the legumes for its large proportion of fat (50 per cent) and its resemblance in taste and use to the true nuts. Long as the peanut has been cultivated in the South, it has never to any extent taken the place of a food, but remains a food accessory for occasional use only. No laboratory experiments seem to have been made on human beings as to the extent to which peanuts are digested, but according to general experience, the peanut eaten in any quantity is indigestible in the sense of bringing on pain and distress. This is probably on acount of their rich, concentrated character. It is to be noted that when they are eaten in connection with other food, as bread, the ill effects are less marked.

MUSHROOMS.

In cities and in the larger towns there is a growing number of persons who are able to recognize, with a fair degree of certainty, the plant which is usually understood to bear the name of "the mushroom," and which appears chiefly in pastures, and similar open places in fields.

This plant sometimes occurs in great abundance, and the eagerness with which it is sought by those who know its value as a food or relish, testifies to its importance as an article of diet.

If the worth of mushrooms as food was properly appreciated, even by the inhabitants of small villages and of the country, the ability to recognize several of the common species would not be difficult to acquire by those who would give an amount of attention to the subject equal to that which they bestow upon some other natural objects.

EGG PLANT.

Many people in California have never tasted this vegetable, let alone growing it. The egg plant is easily grown and a few plants, if in rich soil, will produce enough eggs for a family. They must not be started too early, as they are natives of the tropics, and therefore require rather warm weather. The fruit is fit for use from the time it is the size of a pear until it is fully grown. It is not as good when it indicates an appearance of ripening. The New York Improved Large Purple and the Black Pekin are two of the best varieties, and are offered by most seedsmen.

CHINESE WHITE CABBAGE

The Pe-Tsai (or "white cabbage") of the Chinese, is properly an annual plant, which has much the habit of a Giant Cos lettuce. It needs a moist and cool soil for its best development. If the plants are left too long in a seed-bed they tend to run to seed, and they do the same if set upon a hot and dry soil. The plant is nearly as hardy as the ordinary cabbage, and takes advantage of the cool weather of September to make its best leaf growth.

CHINESE BEAN.

This is a pole bean with few-seeded pods of great length and which are eaten after the manner of the pods of string beans. The same species, but commonly a shorter-podded variety, is sold by our seedsmen as French Yard-Long Bean. This bean is native to South America, and is widely cultivated in warm countries. It requires a long season, but we have little difficulty in securing pods twenty inches long. These pods are very slender, and somewhat flattened and ridged, and the beans are often placed two inches apart. The beans are like those of the French Yard-Long,—small and oblong (½ inch or less long), cinnamon-brown, with a white black-bordered eye.

VALUE OF BEAN AND PEAS

The green or immature pea and bean are among our most valuable green vegetables and fully deserve the place they now hold on our bill of fare. The value of the dried pea, bean, and lentil is such that one or more representatives are found in every country as a staple food, and they have been thus used from the earliest times. They are especially rich in protein, the nitrogenous constituent which forms the chief nutrient of meat, and are thus fitted to take the place of part of the meat in any dietary. Since in comparison with their value their price is low, they must be considered among vegetable foods as next in importance to bread.

As compared with the cereals the legumes are (1) less completely digested if eaten in considerable quantities; (2) it is improbable that they can be made into any form of palatable bread, and (3) their flavor is less generally liked, and on that account will not be made a regular daily food except by people who are forced to it by necessity. In view of their low cost and high nutritive value, however, they may profitably be used even to a greater extent than they are at present.

SEED SOWING.

Unless certain of the germinating power of seed, they should be tested before planted. It is very provoking and expensive to make elaborate preparation, and after careful planting find that they do not germinate when it is too late to secure another supply and plant again. If 100 seeds are counted and planted in a shallow box and kept in the proper temperature it is no difficult matter to ascertain to what extent they may be depended upon.

It is of the greatest importance to the gardener that the proper preparation of the soil be made for the reception of the seed. Manuring, plowing and harrowing should be through with before planting time. More failures result from improper planting than from inferior seed. The seed should be put in the ground when it is neither too dry nor too wet. An important operation in connection with seed sowing, and one often neglected, is the rolling or firming of the soil after the seed have been covered. The best implement for this purpose is a good hand roller, though the back of either a spade or hoe may be used, or it may be done with the foot. Seed thus firmed will often vegetate or appear above the ground two or four days earlier in very loose soil than those left loosely covered. Garden seeds sown in drills will almost invariably give better results than those sown broadcast, if properly thinned and cultivated. A good seed drill will save both seed and labor, and should be used when seed are to be sown in quantity. Drills may be procured that open, sow, cover and roll, and no market gardener can afford to be without one. The depth to which seed should be covered varies with the different classes of seed, the character of the soil, the quantity of moisture present, and the season of the year. In light sandy soils, seed require deeper covering than in stiff, heavy or clayey soils. The dryer the soil, the deeper they should be put in. They should be planted deeper in warm than in cool weather. The size of the seed to a great extent controls the depth of planting. If the soil is in perfect condition, the covering should be two or three times greater than the thickness of the seed, but deeper if in very light soil, and not so deep if in heavy.

THE TOAD.

Its great value to the pomologist and gardener has been fully established, on account of its destroying insects, especially those injurious to vegetation. We should, therefore, cultivate its friendship and assistance in the garden as well as that of birds. Every tidy housewife detests the cockroach and other vermin. Two or three domesticated toads will keep the coast clear of these. The toad is possessed of a timid or retiring nature, loving dark and shady places, but under kind treatment becomes quite tame. Many instances are cited of pet toads remaining several years in families and doing valuable service. All that is necessary to secure their co-operation indoor or out, is to provide them cool and safe retreats by day, convenient access to water, and they will go forth to the performances of their nocturnal duties without money and without price. In Europe toads are carried to the cities to market and are purchased by the horticulturists, who by their aid are enabled to keep in check the multiplication of the insect tribes which prey upon their fruits, etc. Nowhere will they prove more beneficial than in the vegetable garden.

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Plants grown from seeds from the first ripe fruit upon a given plant give poorer yields and no earlier fruits than other plants grown from a fruit from the same parent which ripens three months later, and it is probably safe to say that no gain is secured by selecting seeds from early or first ripe fruits without giving any attention to the character or habit of the plant as a whole.

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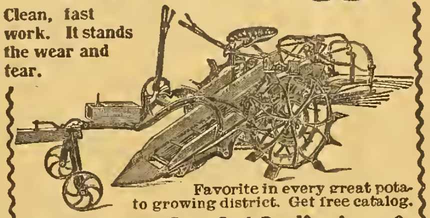

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The Farmer's Occupation—All too many children born and reared upon the farm have instilled in them at an early age the idea that farm life is one to be sneered at, to escape from if possible, and that it is a ceaseless round of the meanest toil and drudgery without reasonable compensation. This is entirely the fault of the parents. Why not take the advice of James Whitcomb Riley and "sing a song o' cheer" instead of keeping up a continuous grumbling about the long hours, hard work, poor crops, distances from market and other drawbacks to rural life. Be the optimist. See the bright side of all things rather than the dark. "Sing a song o' cheer."

Such doleful utterances cannot fail to have a detrimental, depressing effect upon the receptive mind of the child. They quickly gather the idea that rural life is undesirable and distasteful, a something dreaded by all and borne only by those who cannot escape it. Many persons insist in seeing only the dark side of any life, but it really seems that this is more true of the rural population. It is a wonder that some farm boys and girls ever amount to anything so continually is it drummed into their ears that farm life is inferior to all others.

It is high time for country people to stop this nonsense and teach their own and other children to be proud of their comfortable rural homes, away from the noise, dirt, and turmoil of city life, away from the foul air and soot laden atmosphere, from street brawls and vice on every hand. Teach your boy that if he is honorable and upright, and knows how to farm and farm well, he is the equal of any man, and superior to most of them. Teach your girl that home life upon the farm can be made the sweetest and purest of all. Teach them both a reverence and love of nature in all her various departments and that only in the country may you live close to her, and with her, and above all, teach them the life above outlined by living it yourself.

* * *

Soil Destruction.—Our farmers are rapidly awakening to the importance of cover crops or green manuring, having become convinced that in past years they have been practicing soil destruction on a most extensive and ruinous scale. In the orchard sections particularly, both citrus and deciduous, this impoverishment has until recently known no abatement.

Orchards have been scratched and ploughed over with great destruction to the humic contents, and with little thought that herein lay the greatest source of danger. The small amount of commercial fertilizer and stable manure worked into the soil has in no single instance been sufficient to overcome the drain of crops and continuous cultivation.

Leguminous cover crops, aside from returning to the soil the most necessary and most expensive fertilizing element—nitrogen—improve the heavy soils in texture by becoming intermixed and mingled with the finer particles, thus gaining in tilth, aeration, etc., as well as in powers of reception and retention of moisture. More than this it prevents our soils, especially upon the hill-tops, from becoming "washed out." In too many orchards the crop productive powers of the soil have been transformed from the upper to the lower levels by this "washing out" process through failure to plow deeply to increase its storage capacity and also by keeping the land stirred during winter instead of planting a cover crop to hold the soil. The pursuance of such a suicidal policy will in time reduce our foothill orchards to a problem of how best to till the subsoil. There is no question but the preservation of the fertility of some of our best land lies in the intelligent, continuous use of cover crops.

* * *

Agricultural Education.—Sentimentalists are fond of echoing the cry of "back to the country" or of "harking back to nature," but what we should strive to overcome is the "harking" away from the country and nature. Our farm boys are educated away from the farm. How many fathers can say, as did a Riverside rancher of means, last week, "I point with pride to my son as one who, having received a splendid education, has not been lured from the soil by the glitter of city life."

The right kind of education will not wean them from a love of and interest in farm life. Too much stress cannot be laid on the importance of farmers giving their boys a good education along agricultural lines. A proper system of instruction will cause our farm boys to "hark" back to the old home as soon as their education is complete. They will be fitted to get, with one half the labor, double the results from the old place, as compared with those obtained by their fathers. An education is one gift you can give your boy that he can neither lose nor squander.

* * *

The Hepburn Rate Bill.—At the present time it looks extremely doubtful if we are to receive any benefit from the present congress in the matter of fixing transportation rates for agricultural products.

The principal feature of the original bill is to allow the Interstate Commerce Commission to fix rates of transportation. It directs said commission to investigate complaints and unreasonable charges by railroad companies in the transportation of persons or property, and to inquire as to whether the rates or practices "unjustly discriminate or are preferential or prejudicial, in violation of the act." They are further directed to prescribe what is just and reasonable, as a maximum rate, and in the practice of the corporations in dealing with the people.

As it came from the House, an order or finding of the commission could not be suspended, but remained in force pending litigation. This provision took away all inducement for the carriers to invoke the law's delays, and made it rather to their interests, if they had just cause for complaint against an order of the commission, to hasten the court's decision rather than to delay them. This brief statement shows what it was, and intended to be, when it received the unofficial approval of President Roosevelt.

The Allison amendment virtually defeats the original purposes of the measure if the latter should become a law. The amendment provides that any United States Circuit Court where the cases are heard may "enjoin, set aside, annul or suspend" the order of the Interstate Commerce Commission, pending the litigation which may be brought to vacate the order of the commission. Under this amendment the railroads would have it within their power to defeat the very objects for which the Interstate Commerce Commission was established. The commission can specify a rate, but cannot put it into operation, for the carriers, by appeal to any Circuit Court of competent jurisdiction, can have the new rate suspended until it shall have run its course through the courts. The Allison amendment provides for court review first. This leaves the shippers practically where they now stand.

The bill will now go back to the House. That body, as a matter of course, will refuse to accept the confusing and emasculating amendments of the Senate, and the result will be a conference, through committees appointed by both Houses respectively and undoubtedly there will be a determined struggle in conference. The Senate and the House conferees will doubtless find themselves far apart. If they reach an agreement, through mutual concessions, each house of Congress will have to ratify the agreement in order to make it binding, and the President's signature will be necessary to complete its enactment into law.

With all this weakening by "ten pages of amendments" there is still some good left in the bill if it passes as at present constituted. One amendment which is most commendable, makes pipe lines common carriers and amenable to the provisions of the bill. The imprisonment clause and the anti-pass amendment are further wholesome provisions, and for these we should feel thankful, but in all that California farmer is deeply interested, the bill is practically emasculated by the Allison amendment. When the matter is sifted to the bottom it looks as though an Interstate Commerce Commission was a superfluity. The United States Senate has, of late years, been considered so unrepresentative of the people, that little was expected of it in relation to relief from exhorbitant rates of transportation and therefore our disappointment is not great. It is sincerely to be hoped that joint conferences will result in weeding out many of the most vicious and unjust amendments, and that in the end the people will receive a decided and much needed reduction in rates.

* * *

Our Seed Industry.—The past few years have demonstrated, beyond a doubt, that California is destined to be the largest seed growing section in the world. At one time it was thought that in the Santa Clara valley alone could be grown certain seeds superior to those from any part of the world and while this favored section still leads, there are many portions of Central and Southern California that have made an enviable reputation in this respect.

For several years past nearly all the seed farming has been confined to the Santa Clara, Sacramento and San Joaquin valleys. Nearly 4000 acres are grown in Santa Clara county alone. Abundance of water, level land, good soil and climatic conditions, with low priced acreage has built up for this county this now world-renowned industry. The same is largely true of the two other valleys mentioned. However, there are some crops of seed of such remarkable value that price of land is of little importance, in fact, no other crop in the world will bring larger returns per acre than certain rare flower seeds, and many growers of these are situated south of the Tehachepi. Every year sees an increase in the acreage devoted to seed growing in all parts of the state, so that in time this industry is destined to become one of paramount importance to our whole people. Already the reputation of California-grown seeds is world-wide and our seed fields have reached vast proportions, giving steady employment to nearly 5000 persons. A long dry summer and an almost continuous season are the peculiar conditions which have placed our state well in the lead. Just at present a trip through the principal seed growing sections by rail presents a gorgeous and ever changing panorama of color, while all about the air is laden with the most bewitching perfume.

* * *

Roads In Oregon.—In 1904 there were 34,258 miles of public roads in the State of Oregon, of which 2,235 miles were surfaced with gravel, 209 miles with stone, and 145 miles with plank, making a total of 2,589 miles of improved road. It will be seen from these figures that about 7½ per cent of the roads have been improved. By comparing the total road mileage with the area of the State, it appears that there was about thirty-six hundredths of a mile of public road per square mile of area. A comparison of mileage with population shows that there was 1 mile of road to every 12 inhabitants, but only 1 mile of improved road to every 159 inhabitants.

NEWS OF COUNTRY LIFE IN THE GOLDEN WEST

HORTICULTURE

Portersville is getting ready for its citrus fair.

Pomona is to have a new marmalade factory.

Ontario reports about 200 cars of oranges yet to be shipped.

Corona has under way definite plans for extensive street tree planting.

Brawley has been shipping new onions by the carload for several days.

Sonoma county expects an unusually large crop of apples and cherries.

The "June drop" of peaches is reported as very bad in San Joaquin county.

The grain around Escondido is reported as looking well, but some smut is making its appearance on the oats.

Highlands is to have an orange cider plant that will be extensive enough to care for thousands of boxes of cull oranges.

Owing to the unusually wet winter, some almond trees in Central California have perished from an excess of water.

The recent rain around Marysville is said by orchardists to have done little or no damage to cherries or other fruits.

The Mountain View Fruit Exchange will rebuild their packing house, which was made by the earthquake simply a pile of bricks.

The San Pasqual apricot growers have sold their entire crop for the coming season to northern buyers for eight cents per pound dried.

Grapes will be grapes in California for some time to come. Practically all the wine that was stored in San Francisco has been destroyed.

Every fruit packing house in San Diego county is running to its full capacity, and the quality of fruit being handled has never been better.

The first shipment of Valencia oranges was made from Lindsay last Wednesday when the Lindsay Fruit Association sent out three cars.

All fruit trees around Ukiah except peaches are loaded. The Bartlett pear crop will be the largest in five years unless something unusual happens.

The apple growers of the mountain sections of San Diego county are feeling good over the bright prospects for a record breaking crop this year.

It is estimated that California will this season ship to other states 7000 carloads of fresh fruits, and that they will bring from ten to twelve million dollars.

The hill lands of the Bixby ranch near Los Angeles are to be converted into extensive forests of eucalyptus for the purpose of raising timber for posts and lumber.

Solano County reports grape outlook "splendid," cherries from half to full crop, peaches 60 to 75 per cent, plums 40 to 75 per cent, prunes 60 per cent and pears as full as last year.

The walnut trees come out in leaf better this year, in Orange County, than for several seasons past, and the nuts seem to be setting well for an average crop. Apricots will be a light crop.

The Fresno Home Packing Company have purchased the Balfour-Guthrie warehouse in Dinuba and will equip it for a raisin and dred fruit packing house in season to handle the crop of 1906.

It seems to be the general opinion around Campbell that the coming prune crop will not be over a half of the average crop. Apricots are extremely scarce, cherries light, but peaches are a good crop.

P. W. Morse, Watsonville, has just received a beautiful gold medal, containing about $75 in gold, the same having been won by his firm at the World's Fair at St. Louis two year ago for the best display of apples.

Fruit shipments in carload lots for 1906 commenced from Vacaville Thursday, May 17th. A peculiar feature in this connection is the fact that this is the same date on which the first carload left by freight last year.

The fruit crop promises well in the Santa Clara Valley with the exception of apricots. Prunes will yield about twice that of last year: peaches are fairly full, cherries generally are a little light, but not so much so as last year. Apples and pears promise well.

The announcement is given out by the California Northwest Railway that Sunday, May 20th, will be "Wild Flower Day," and a bouquet of wild flowers will be handed to every passenger on the south bound trains. "Poppy" and "Rose" days will be observed later on.

Packers estimate that a normal crop of prunes in the Santa Clara valley is 110,000,000 pounds. Last year the crop was only 35,000,000 pounds, and the year before that 70,000,000. For that reason the price this season should be good. We have had two short crops and the market is cleaned out.

With the exception of a few cars of Valencias, sweets and seedlings, the orange season for the year 1905-1906 in the Redlands region, is ended and shipment of cars from the district including Highland, East Highlands, West Highlands and Del Rosa, is 1254 cars, as against 1800 for last season.

AGRICULTURE.

Corona now has a healthy farmers' club.

The overflow from Tulare lake has destroyed a vast acreage of crops.

Arrivals of hay at San Francisco during last week were 2100 tons.

Brawley expects to ship 200 cars of canteloupes during the present season.

Nine and one-half cents is the best price offered for hops around Santa Rosa.

This season promises to be a good one for potatoes throughout Ventura County.

All sections south of the Tehachepi report a splendid outlook for general farm crops.

The Anchor cheese factory at Compton is turning out about a ton of cheese daily.

Orosi reports promise of a large yield of both wheat and barley, and the hay crop is heavy.

Beekeepers about Lompoc say present conditions warrant expectation of a poor harvest of honey.

The freight shipments from Escondido last week were, three cars of hay, two cars of lemons, and one of grain.

The beet acreage around Chino has geen somewhat enlarged since our last report, and the crop is looking well.

Many parts of California are jubilant over the late rains, which in many places has been of great benefit to crops.

It is reported that one of the Ukiah growers has engaged his hops for 9½ cents for two years and 10 cents for the third.

All along the central coast portion and the San Joaquin and Sacramento valleys grain and hay crops will both be excellent.

California farmers are making a united effort to secure grain sacks from China, as our own supply is extremely short.

Hop growers around Ukiah report the vines are well up and an even stand. Prospects so far are good for the largest crop in years.

Alfalfa cuttings around Cornng have run as high as three tons to the acre for this season's first cutting. How's that for non-irrigated land?

Farmers of the Imperial Valley are complaining that they cannot procure enough help to harvest the immense crops now demanding attention.

The cantaloupe growers of the Imperial Valley claim they will need one thousand men for several months in order to care for the crop, which will be large.

The rain in Mendocino County Monday was a great help to everything, especially the second crop of alfalfa, and did not damage what hay was down.

Newton B. Pierce, United States government pathologist for the Pacific coast, has received notice from Washington, D. C., ordering the station at Santa Ana to be closed.

The heavy rainfall of the present season, with rains down to the past week have insured unusual crops in some sections and caused but very slight damage to anything.

An abundance of rain has fallen in the Monterey section this season and good crops are assured. Farmers report that they will have the best grain crops they have had in years.

The farmers around Compton are busy harvesting a large crop of hay. Worms are doing considerable damage to alfalfa. Hot weather is earnestly wished for to put an end to these pests.

The express shipments from Escondido for last week were 4,590 dozen eggs, 2,238 pounds chickens, 3.030 pounds cream, 2,265 pounds of butter, 3.240 pounds of vegetables, and 1.485 pounds of meat.

The total rainfall at Healdsburg for this season is 46.36 inches. At the corresponding date last year the record was 51.37 inches. Frost was reported on Tuesday though no damage was done to crops.

One of the hardest rain storms of the season struck Lindsa-- last Friday afternoon. The water came down in torrents and in half an hour the streets were flooded, but farmers say no harm will result to crops.

The gratifying intelligence has come that the famous Stanford Ranch at Vina may soon be offered for sale in small tracts in order that Stanford Unversity may repair the damage wrought by the recent earth tremblors.

Farmers throughout the Santa Maria section are jubilant over excellent prospects for large crops of grain and hay. Neighboring valleys will have large yields and it appears that those crops will be among the heaviest ever harvested in this State.

LIVE STOCK.

The creamery at Watsonville is shipping butter to Los Angeles for the first time.

About 1200 bales of the spring clip of wool were sold at Red Bluff at prices ranging from 21 to 24 cents a pound.

Thirty cowboys are rounding up the cattle about Redding preparatory to driving them to the mountains for the summer.

On May 19 Fish and Game Warden C. A. Reed with a force of assistants began the distribution of 1,250,000 trout in the streams of Santa Cruz County.

The Wool Growers' Association in session at Marysville, cut its spring sale short at noon May 8th by issuing a statement that the sale would be continued on June 8th.

More than twenty thousand head of sheep and lambs have been shipped from Tehama County during the past fortnight and the total for the season runs away up into the thousands.

The Marysville Wool Growers' Association closed its spring sale last Saturday without disposing of much spring clip. Prices ruled about 22 cents, and growers wanted 25 or better.

The San Luis Rey Creamery reports a supply of 987,881 pounds of milk for the year from 260 cows, from which $14,971.66 was received. This produces a gross income of $57.50 per cow.

E. A. McDonald, Dairy Inspector, U. S. Department of Agriculture, whose headquarters are at Seattle, was rummaging the southern end of the state during the past week for statistics for a bulletin to be entitled "Dairying on the Pacific Coast."

LINER ADVERTISING

Advertisements in Liner Column will be charged 1¼ cents per word. No advertisement taken for less than 25 cents. Eight words to a line.

LINERS

FOR SALE—A FEW THOUSAND BLUE Gums, cheap to close out, Address L. Z. Huntington, Anaheim, Cal.

WANTED—WILD TURKEYS EGGS AT $100 00 per setting. Address only The Grace Glory Grounds, Brawley, Calififoruia. Wilds of wild Turkeys (acclimated).

BLUE ANDALUSIAN EGGS FOR HATCHING, from three noted strains, $2.50 and $3. Incubator lots $7.50 to $15.00 per 100. Mrs. T. R. Griffith, 3111 Walton avenue, Los Angeles.

FRUIT CANNING MACHINERY FOR THE Ranch or Factory, 6sizes, $10 to $225. All appliances, highest award by U. S. Trades Report. Address, W. S. Ritchie, Pacific Coast General Agent, Corona, Cal.

FOR SALE—OR EXCHANGE FOR TOWN or rauch near Los Angeles or north inland from coast, poultry and fruit ranch of 33 acres, shipping canning and drying fruits. All nnder cultivation and good improvements. Two hours' ride from San Francisco by cars, one mile from town. Address Box 64, Sonoma, Cal.

FOR SALE—WHITE MINORCAS EGGS $1.50 sitting from one of the nicest pens of Wh. Minorcas in Southern California. Lay the most eggs and the largest-whitest eggs of any breed. Call and see them at 547 W 54 St., or address 1004 E. 9th St. Also incubator chicks for sale.

Live Stock and the Dairy

BY MRS. MINNA. E SHERMAN, FRESNO, CAL.

INTELLIGENT FEEDING.

The error most common in the San Joaquin Valley is mixing up the breeds, for instance, I am constantly in receipt of letters asking for a good bull to use on a good Jersey or Durham herd. I always reply, "don't mix your breeds if you are thoroughly satisfied that some other breed is better adapted to your conditions begin again, with common cows, or exchange or sell your grades, and buy grades of the breed you wish, but do not think that you can take either a Durham or Holstein grade for large milk production and by using a Jersey sire make their milk five or six per cent. butter fat, or take the little Jerseys and use a Holstein sire, and make them give you six, seven or eight gallons of milk. It is useless to try this, as to think that a Chinaman will make a good American citizen. Intelligent feeding and gentle handling are necessary to make cows do their best at the milk pail.

If a cow weighs 1000 pounds she needs, to keep her alive without giving milk or carrying a calf, 25 pounds of hay. Now calculate; if the cow lives on say 25 pounds of hay, increase this to 35 pounds and she must put extra fat enough into the pail to pay for the first twenty-five pounds, as well as the labor and the last ten pounds. Now, the thing is to find at what point to stop increasing the quantity and turn to increase the quality of the ration, for the nutriment can be doubled within a given quantity of milk. The fine point of feeding cows for record is to give this food palability and vary it so as not to clog the appetite.

The balanced ration of the cow stable has lately been considered by some people to be a delusion, but, until they can suggest some good explanation of the result attained by its use over a long extended term, we must abide by it, rather than feed haphazard.

In deciding how much to feed a cow, her live weight, loss by excessive exercise, amount of milk produced and the changes of temperature, must be considered.

The balanced rat[illegible]s for 28 pounds of dry matter for every 1000 pounds of live weight. This ration should contain 2.5 pounds of protein, to form casein in the milk and the lean meat of the body; 12 pounds of carbohydrates (this is the digestible starch and sugar); half a pound of fat. This gives a ration of 1.5 which means the proportion of protein to carbohydrates and fats. This is a balanced ration. Any excess of protein makes it narrow, while any excess of carbohydrates makes it wide. The ration for dairy cows is narrow, while that of beef cattle is wide. Protein has an effect, that we cannot understand, in that a dairy cow can be fed on a too narrow diet, and will often give more fat in her milk than she receives in her food. This is, however, reaching a danger point and the calves will show it and the next generation be weakened.

The watering of cows in California is many times neglected. There should be abundance and it should be convenient, for cows ought not to climb up and down steep banks; indeed, often they will go thirsty rather than do so. Any decrease in the milk flow from lack of feed or water is not made up in an increase per cent. of butter fat, and lack of water in fresh cows often produces congestion of the udder. The elimination of the wastes of the system must be carried on by water in the secretions.

Bran is almost a universal feeding in California, yet we believe, except for sick cows or at calving time, it is a too expensive feed when alfalfa is grown for the hay and can be chopped and added to the rations. If the alfalfa chop is wet over night and then mixed with the grain feed the cows like it. The difference between alfalfa hay and bran is in the carbohydrates and these can be added cheaply from corn. One hundred lbs. of alfalfa hay has 36.6 per cent. carbohydrates, and 1. 1-2 pounds of fat and 11 pounds of protein, while bran has to the hundred pounds, 11.2 lbs. protein, 42.2-10 lbs. of carbohydrates and 2.5-10 lbs. of fat.

Rice bran we found the cows do not like so well so that settled that feed. Cocoanut cake is liked and does very well when not fed to exceed four pounds a day. Salt should always be kept before the cows, but we do not believe in salting their food for them, though Prof. Cook does. We would not like anyone to salt our food for us so we would be thirsty all the day. When the pastures are fresh and good the cows will require little grain food except extremely heavy milkers. These should be fed for it is cruel, as well as wasteful to allow a cow to grow thin under heavy milking. A heavy milking cow may not be able to obtain enough nutriment from the grasses, as the bulk required may be more than she can digest; then she becomes weak and thin. A little grain will help her out. Malt sprout and distillers grains are hardly fit to feed if furnished wet as they sour quickly, and are really swill before they reach the cows. In the east they are dried and then make a fair cow feed. Linseed meal is used as a condiment more than as a food, in interior parts of the State. While the quality of the milk a cow gives is largely fixed by nature, we can find our gain increasing the quantity. This may be done by feeding the narrow ration. While we have fed a variety of food to cows, including raisins and dried fruits, still our standard rations have been as follows:

The following was used while wheat was very low: Four pounds of bran; 4 pounds of chopped alfalfa hay; 4 cocoanut cake; 1 pound of oil cake meal. This second one is a favorite: Thirty-five pounds of corn silage; 4 pounds of chopped alfalfa hay; 4 pounds of rolled barley; 2 pounds of cocoanut cake. The third ration is merely a variation: Thirty-five pounds of alfalfa silage; 6 pounds of Egyptian corn; 2 pounds of rolled corn and 2 pounds of cocoanut cake.

Ten pounds of alfalfa hay is allowed with these rations. Often a cow was given a larger amount. In the feeding alley at the back of each cow's manger, we used colored chalk to indicate the feed, a cow [illegible]g out of milk has a white cross that means to decrease the grain ration, a fresh cow has a blue cross, that means increase slowly until she has her full can; a yellow cross means full ration; while a red cross means give her all she can eat. Now to balance this so no cows will have too little the silage is fed out in the yards and put out at the rate of 35 five to the cow, but should there be more than the usual amount of dry animals this is increased until there is enough left in the mangers to feed to the calves, usually about one extra cow's ration. It never pays to under feed.

Where the family of small children do the milking and are receiving their training in usefulness, a cheap ration and less profitable cows can be used with good results financially, as the outlay of thirty dollars a month and board is saved for each milker. Some of our neighbors use the following with good results: Thirteen pounds of alfalfa hay; 13 pounds of good barley hay. This lacks succulency and the cows require to run out to pick up a little green stuff. Again some feed 25 to 30 pounds of alfalfa hay and fill up other racks with wheat straw. The pie melons, watermelons and pumpkins are added to this with fairly good results.

To be useful in dairy management, we must not only feed our cows intelligently, but by the use of modern means of handling the milk make it pay. This is first, in sanitary cleanliness; whitewash every building that the cows go under for cover, keep things sweet and free from bacterial taints. Then our calves must be fed in the best way to make them profitable, we believe we will in a few years, see the large separator at the creamery not at work, but that every farm will have its own machine. The creamery men are blaming the poor quality of the butter this winter, on the farm separator, and it may be true, but then it only argues that the butter makers will have to use the acid on each lot of cream that comes in, and not do as many do at present, dump it all into one vat and let it

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Is open to a man who understands dairy cows. He must be a man who can find out what is best for them in their efforts to produce milk and who can feed and handle them so that they will give all the milk they are capable of producing without forcing them. Address **Mr. Blank, care of California Cultivator, Los Angeles, Cal.**, giving full particulars as to what you have done and where and when you did it, your age, salary expected, family, etc.

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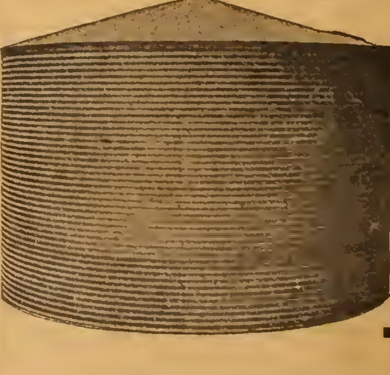

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Advertising Column for Members
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Organized for the general advancement of Jersey interests, to extend knowledge of their superior merits, for the mutual benefit of members, and to increase the profitableness of one of the State's greatest industries. Breeders are requested to unite with the Association.

FOR SALE

A registered bull calf, 6 months old and a beauty. Uniting the blood of the famous World Fair champion cows Ida Marigold and Brown Bessie combined with the Sweepstakes' Bull Pedro.

No finer combination in breeding can be found in the State. This individual is fit to head the best herd. Detailed information on application.

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Having sold my ranch I am forced to sell Golden of Biltmore. 60082, a grandson of Golden Lad's. Golden of Biltmore is one of the best, ***If not the best*** sire on the coast. Several of his daughters less than two years old selling for over $200 each. Highest bidder for next sixty days takes him. If everything is not just as represented, I will give anyone the ***bull free of charge. I sell on merit.***

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heads the Ramona Herd of Registered Jerseys of
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Have moved their herd of Jerseys from San Bernardino, Cal., to the famous Imperial Valley, and hereafter their post office address will be Heber, San Diego Co., Cal., from which they will conduct all their business. Abundant green feed every day in the year will be of great advantage in the best development of our young stock.

Whiting Jersey Stock Farm Co., Heber, San Diego Co., Cal.

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Leffingwell Rancho, Whittier, Cal.

Service bull "SARGENT FOX," 64833. Bred on the Island of Jersey. Sire, the great Flying Fox, that sold at auction for $7,500. Dam, Miss Sargent, reserve winner over Jersey; winner of seven first prizes and five championship cups. "One of the grandest cows the island has ever produced."

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For Sale, yearling bull Ruth's Gordon King, No. 72360 A. J. C. C. He is of richest breeding on both sire and dam's sides. Also three richly bred heifer calves by Marigold's Exile King, from cows that are good yearly producers. For particulars write

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Sons of imported Golden Marquis out of prize winning and tested dams. for sale.

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At head of herd. Young stock for sale.

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stand until they are ready to churn. The cream will then have to be churned when it is ready or be held in a cold storage room. The farm separator was never placed on a farm where stock was raised, to be abandoned. The time alone wasted in standing around a creamery waiting until the milk runs through the separator will soon pay for a small separator. We lost a large and valuable bunch of calves by feeding milk from a creamery. Today we would rather feed the calves on hay tea than chance the risk of feeding the stale skim milk sent out as pasteurized, to the farmers. We believe it is not so much the dirt or disease as it is the changing temperature that the milk undergoes that taints it for feeding.

DAMAGED WHEAT AS FEED

The Department of Agriculture sends out the following on damaged wheat as a feed: It will apply to California conditions in the Northern part of the State where more or less damaged wheat is raised every year. Not long since a subscriber in Inyo county, asked the question whether rust in wheat damaged it as feed and we answered , yes. But these authorities would seem to hold that there is no danger in damaged wheat as feed.

Every year more or less of the wheat crop is damaged by excessive moisture, freezing, rust or other diseases, etc., and is for that reason of poor milling quality and unmarketable. In particularly good seasons the amount of wheat of poor quality produced may be so small as to be of little importance, but in unfavorable seasons the proportion of inferior wheat is often so large as to make its profitable utilization a very serious and important problem.

Several years ago D. N. Harper, of the Minnesota Station, made a very thorough study of a large number of other agencies, and showed that while such wheats were in most cases of poor quality for milling and for seeding, they contained on the average somewhat higher percentages of protein than normal grain, thus indicating "that they would be good for feeding purposes." His results and conclusions have been confirmed by more recent analysis by H. Snyder, of the same station, of samples of rusted wheats, which showed such wheat as a rule, to contain higher percentage of protein, fiber and ash, but less carbohydrates than fully matured grain from rust-free plants grown under the same conditions. One of the samples of rusted wheat examined by Snyder contained as high as 19.3 per cent. of protein, while normal wheat contains on the average only about 12 per cent.

E. T. Shutt, of the Canadian Experimental Farms, found that the grain of rusted wheat is "small, immature, rich in protein, and deficient in starch."

M. E. Jaffa, of the California Station reports analyses showing that shrunken wheat contains 17.1 per cent. of protein and 66.78 per cent. of carbohydrates, as against 11.7 per cent. of protein and 72.65 per cent. of carbohydrates in plump wheat.

These investigations all indicate that any unfavorable condition which interferes with growth and hastens maturity generally results in the production of grain which is higher in protein and lower in carbohydrates than normal grain. And while such grain may be of inferior quality for milling, it may from the standpoint of composition be of somewhat increased value for feeding purposes.

Cream Separators, all sizes, all prices. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

As L. Foster points out in a press bulletin of the Wyoming Station, a number of experiment stations, notably those of Kansas, Maine, Michigan, Ohio, Utah, Wyoming, and Canada, have made experiments which show that when properly fed wheat gives results with all kinds of stock practically equal to those produced by corn.

In composition and digestibility it is superior to corn, but it differs from corn in the fact that when fed alone stock will not eat it as well and do not seem to have the same relish for it, because it is too sticky when ground, adhering to the teeth and gums. There is greater danger, too, of overfeeding than with corn, but when fed in connection with other grains, or particularly with bran, there is little danger of getting the animals off feed, and all kinds of stock then seem to like it fully as well as corn and make equally as good gains on it.

There is good ground, therefore, for the belief that when for any reason a considerable amount of wheat is produced which cannot be marketed to advantage it can be profitably utilized as feed.

In Canada and other northerly regions frozen wheat is probably the most common form of damaged wheat, and has therefore been more extensively experimented with than other kinds. The analyses which have been made of frozen wheat indicate that it is likely to be slightly poorer in food constituents, especially protein, than normal wheat, probably owing to the fact that it has been arrested in the process of maturing and not hastened to maturity, as in case of rusted wheat for example.

In experiments made in Canada, frozen wheat gave a return of about 60 cents per bushel when fed to steers, and from 45 to 75 cents per bushel to pigs, depending upon the way it was fed. The best results were obtained when the grain was ground or soaked for twenty-four hours before feeding. Both the beef and the pork produced was of superior quality. In experiments at the Utah Station frozen wheat was compared with good wheat and wheat screenings as a feed for sheep. The animals made profitable gains on all three feeds, the screenings (containing alfalfa and clover seed, cracked and shrunken wheat, etc.) giving somewhat better results than either frozen wheat or good wheat.

According to J. W. Wilson of the South Dakota Station, a considerable amount of wheat in the northwestern part of the United States was damaged by rust in 1904 and its value lessened for milling purposes. In comparative tests of the feeding value for pigs of two lots of such damaged wheat weighing 57 and 44 pounds per bushel, he found that rating pork at 4 cents a pound the heavier wheat gave a return of 63 cents, the lighter 57, per bushel. The heavier wheat contained 13.21 per cent of protein and the lighter 12.01 per cent., and practically the same amount of carbohydrates, 72 per cent. The heavier wheat was not only a richer feed, but was apparently more digestible than the lighter.

While no careful experiments on

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20 head Draft and Driving Horses.

Implements—Bell City Feed Cutter with elevator and cables, 8 horse power Lambert Gasoline Engine, No. 5 Centrifugal Pump, 3 large Gasoline Tanks. Double and Single Harness, 3 Single Buggies, Cart, Cultivator, Fresno Scraper, Bradley 16 in. Plow, 2 Walking Plows, Seeder, 6-gang Plow, Rake, Disc. Mower, 2 100-ton Silos, Milk Wagon, 92 gal. Milk Tank, Stanchions and Cow Barns, Hay Wagons, Harrows, 25 Cords Wood, Feed Racks, Corn Seeder, Sacks, Pipe, Troughs, etc., etc.

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ADVANCED REGISTER, CLASS A, A. J. C. C.

This cow has recently completed a Yearly Authenticated Fat Estimate, giving milk, 8445 lbs., 15 oz.; butter-fat. 411 lbs., 15 2-5 oz. She is a daughter of Vela Hastings, Advanced Register, Class A, with a similar record, of milk, 7486 lbs., 3 oz.; butter-fat, 450 lbs.

Due to calve May 30, to Sargent Fox. For price address

C. W. LEFFINGWELL, JR., WHITTIER, CAL.

the subject are recorded, the indications are that many of the damaged wheats are, as a rule, somewhat less digestible than normal wheat on account of their poor physical condition, which prevents thorough mastication. In order, therefore, to get the full benefit of such feeds they should be ground or thoroughly soaked, or both ground and soaked before use. The Canadian experiments indicate that unground or cracked grain should be soaked forty-two hours, and that ground grain is improved by soaking at least twelve hours. As already indicated, the wheat should not be fed alone, but gives the best results when fed in connection with other grain feeds or mill products, such as bran, or with succulent root crops. At the Canadian Experimental Farms pigs were fed as much frozen wheat as they would eat up clean, in connection with as much skim milk as they would drink, with excellent results both as regards rate and profitableness of gain and quality of pork produced.

KEEPS UP THE HERD.

Editor Cultivator:—We do not raise Jersey cattle for sale, they are for our own use and for butter purposes. When we commenced some six years ago, we fixed a standard which we have reached, which is 365 lbs. butter a year for every cow in the herd. For 1905 we did somewhat better. Every cow which does not do that goes to the butcher and is killed. We have a herd now of 75 milking and 52 young heifers, have four bulls of the best type we can get, will have no other. We do not register the cows as they are for our own use only.

E. Booth, Cosumnes.

CALF CHOLERA.

There can be no question, says Dr. Alexander, that calf cholera is due to a germ or microbe and that this microbe may be present in the calf at birth or get on to it as it passes through the vagina, or infects its raw navel cord when birth takes place in an infected stable or the calf is put into a pen previously occupied by a scouring calf.

In view of these facts, every breeder should make it a practice to seek the prevention of scours and navel infection by antiseptic measures. The calf should come in a clean, disinfected, freely bedded and whitewashed box stall. The vagina of the cow should be immediately flushed out with a gallon of 1-1000 solution of chloride of zinc and the injection should be repeated before and after the afterbirth comes away. The belly and navel of the calf should be instantly washed with a 2 per cent. solution of coal tar disinfectant and then wetted with a 1-500 solution of corrosive sublimate, this latter application to be repeated twice daily until the navel cord (umbellicus) shrivels up, drops off, and leave no raw spot behind. Such treatment will not only prevent scours in many instances, but is a sure preventive of navel and joint disease in calves, foals, and other young animals, all of which should have similar treatment of the navel.

In addition to treatment of the vagina of the cow and navel of the calf, the udder of the cow should be washed with a 2 per cent. solution of disinfectant before the calf is allowed to suck, and such attention to the udder should be persisted in until the cow has cleaned and all discharges from the vagina have ceased. For the latter reason the vagina should be flushed out once daily until the tenth day, as this will not only prevent infection of the calf but cleanse the cow in a manner likely to destroy germs of contagious abortion possibly present in her discharges. It may be mentioned that every newly calved cow has what is called the "lochial discharge" about the ninth day after calving and until this comes away and the cow has been cleansed by injection one cannot consider her safe to go among other cows or to be served by the herd bull.

Even where the calf is not allowed to suck the disinfection of the cow should be carried out on general principles, and when every breeder treats his cows and calves in the cleanly manner we have outlined abortion, scours, and navel infection will be little heard of.

Veterinary Instruments, Black Leg and Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

HOG PASTURE.

The hog is a pasture-loving animal. With pasture he thrives, keeps healthy and pays a premium for the grain which he consumes, while without it he degenerates, gets out of condition, and becomes an easy mark for disease. It is the men who raise hogs without pasture that usually tell all manner of hard-luck stories. Their brood sows have small litters, the pigs are weak, the sows eat the young, and cholera often gets into the herd. Feeding hogs without pasture means selling corn at a poor market.

For those who can grow it, there is nothing better than alfalfa for a hog pasture. It is an ideal frame builder and a great bone and muscle maker. One acre of good alfalfa will pasture from ten to a dozen hogs without their eating it too closely. It stands pasturing better than red clover and makes a better feed. Hogs on alfalfa pasture without grain in Kansas and Nebraska make about one hundred pounds' growth during the summer and develop a frame that will stand up under heavy corn feeding during the autumn.

Next to alfalfa for this purpose stands red clover. The principal difficulty with clover is that it is not a permanent pasture plant, and is not apt to hold its own for more than one year. If red clover is to be used, two pastures are necessary, one to seed down while the other is being pastured, and so on, back and forth, from year to year.

For a short-order hog pasture, a heavy seeding of a mixture of rape seed, barley and oats is a good combination of seeds to sow. This is not as much relished as is alfalfa or red clover, and is not as nutritious, neither is a pasture on fresh spring plowing as free from dust during a dry season. It is nevertheless an indispensable requisite to profitable hog raising where the better pastures are not to be had.

Experiments made at the Nebraska, Wisconsin, Illinois, Canada and other experiment stations indicate that from sixty to eighty pounds of grain go farther when fed to hogs on pasture than one hundred pounds of grain without pasture.

There was once a profit in the pen-fed hog, but those days are past. The hog raisers have found a better way. They can be grown so much cheaper on pasture that there is no money in the hog that is fed all summer from the pail or basket.—Colman's Rural World.

Profit in the Poultry Yard

BY MRS. A. BASLEY, HOLLYWOOD, CAL.

DIFFICULTIES.

This year there seems to be in some sections of the country more than usual difficulty in hatching. There seems to be so much moisture in the air in many places, especially near the ocean, that the eggs do not dry out properly and the big, fully developed chicks die in the shell, smothered or drowned; not having room enough to turn in and kick out of the shell.

Occasionally, but rarely, I find a poor hatch from eggs drying out too much, the air space being too large. This occurs from too much ventilation and has happened twice to my knowledge in one or two of the best incubators on the market. The lower felt in two instances I found had either shrunk or did not cover the bottom and there was therefore too much circulation of air; in one case the incubator had been moved and the felt had slipped to one side leaving nearly half the bottom open. The lady owning this machine did not know where the trouble was; she only knew she was having very poor luck. "Perhaps you do not air your eggs enough," I suggested. "I am sure I do not know," was the sorrowful reply, "but a hatch came off yesterday and I will show you the eggs that did not hatch." I visited the incubator room; a nice, dry, well ventilated, plastered room, an ideal place for an incubator. I broke open an egg, half the egg was airspace and at the small end the chick lay dried up. "You have aired the eggs too much," said I, "not too little, see they are all dried out too much." "But I never aired them at all, except when I turned the eggs!" I remembered the felt and said, "Is the felt all right at the bottom of the incubator under the burlap bottom." "I suppose it is!" was the doubtful answer. I took the egg tray out, removed the bottom and there found the felt, slipped to one side so that nearly one-third of the bottom was entirely open and the circulation of air had been too rapid. In two instances the felt was about four inches too small. I do not know if it had shrunk or had been cut too small.

I sometimes receive letters from folks having poor hatches asking "Why are chicks dead in the shell?" Some people even forget to tell me what machine they are using and give me no clue to the enigma, so I can only reply usually—"from insufficient ventilation," sometimes, but rarely, "from too much circulation of air in the incubator," sometimes "from weak germs in the egg," or "the parents being wrongly fed, not having green food or animal food enough in the rations."

I can only give these suggestions which may help some, and would say again, follow very closely the directions of the makers of the incubators, it is to their interest for you to have good hatches and if your eggs are

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK

BUYS THE WORLD'S FAMOUS
EGG FOOD NO. 4

MIDLAND

IF YOU WANT EGGS
YOU WILL FEED NO OTHER

Used by all the largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the GOLD MEDAL at the St. Louis World's Fair for greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1604.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A Filcher, Commissioner.

And Now Comes New Reward for Merit:

Read the following telegram received from the Lewis & Clark Exposition at Portland:

"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

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Raise Every Chick

If every Chick hatched last season had reached maturity in 60 to 90 days—hardy, strong and vigorous—how much extra money would you NOW have in the bank?

You could have SAVED these Chicks—every one—if you had used

Purina Poultry Feeds

—for one kind—Purina Chick Feed, is made on purpose to save the lives of little Chicks, and make them grow like weeds. And it DOES IT. Brings up the highest percentage of every hatch EVERY TIME.

The other Purina Feeds MAKE EGGS—make your hens lay all the year 'round—make zero weather eggs EASY. They do this EVERY TIME, and with EVERY HEN, too.

These may sound like "broad statements."

But don't take OUR WORD for it—try it—prove Purina Feeds yourself by feeding them to YOUR hens or chicks at OUR EXPENSE. If the RESULTS don't come, just tie up the bag and write us, and we will return every penny of your money, and tell you what to do with the unused feed. You are not out a cent in making the trial, for we will supply you through your dealer or direct, FREIGHT PAID, and the feed used in testing will cost you nothing.

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S. C. White Leghorns—Heavy layers. Eggs, $1.50 per 15, $5.00 per 100.

Indian Runner Ducks—Males for sale. Eggs, $1.00 per 13, $3.00 per 50, $5.00 per 100.

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Special offer of breeding stock. To make room for young stock I offer two pens of my select White Rock breeders, each consisting of 6 fine 2-year-old hens and a splendid yearling male, at $12 for the pen. Or, if preferred, will sell one pen of 6 extra good yearling hens with vigorous 2-year-old cock at same price. These birds will please you.

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not drying out, air them more frequently, keep the ventilators open more than usual each operator must judge for himself or herself and experience is the best teacher.

There are so many letters this week in our question box, (this talk on "difficulties" is in reply to one from J. F. B.), that I will ask our readers to consider the questions and answers as part of our weekly talk. I have often noticed that when one person is in difficulty several will be in similar trouble, so I hope my replies this week will come in opportunely to other readers.

* * *

EDITOR'S QUESTION BOX.

Turkeys and Ducks (E. M., Escondido): In reading your paper this week I see you have quite a little about ticks and mites, and I thought that I would tell you of a little experience we had.

We have small hen coops that we can lift around, they got covered with mites before we knew it, we tried several remedies but all failed, so last fall when my husband fumigated the fruit trees he tried the cyanide and acid on the hen coops and it worked fine. He put the big tent over the coops, put the cyanide and acid inside the coops and left it there for two or three hours, then aired them well.

1. Will you please tell me in your paper the best way to run an incubator to hatch turkey and duck eggs, are they to be treated the same as chicks?

2. Where can I get pure Indian Runner duck eggs or ducks?

Ans:—I am glad the cyanide process has proved so successful with the mites, and I hope other readers may benefit by your experience.

1. Turkey and duck eggs require twenty-eight days to hatch. Duck eggs need more air than chicken eggs and often are benefited by being moistened with a little warm water. Turkey eggs should be treated exactly the same as chicken eggs. If you have not many turkey eggs it is best to set them under hens or turkeys.

2. You can get pure Indian Runner duck eggs from any of our advertisers.

* * *

Trap-nests (W. E. L., Santa Barbara): I would like to receive a copy of the Cultivator, I don't know the date, but there is an article in it on trap nests for poultry and I am interested. I read the article in a copy of your paper that was lent to me, and I am disposed to think that the idea is a good one. I can hardly believe that the person who wrote the article also furnished the illustrations. The writer of the article says the box is thirteen inches square inside, but the box in the illustration is a long ways from being square. The writer when describing a door that fits into this opening, which is thirteen inches square, states that the door is ten inches deep and that there is an opening of 2½ inches under the door and 1½ above the door. It is difficult to see how all this is to go into a thirteen inch space.

If the nest is capable of developing a hen that will lay three eggs in one day, it certainly is worthy of more accurate description and plans.

Ans:—The length of the nest as given in the paper was 27 inches. The nest proper, that is the box in which the hen lays, is thirteen inches, the space above the door is 1½ inches and below the door 1½ inches. If you cannot understand by the descriptions and plans given, you had better send and buy one of these nests already made. Henry Albers Co., Los Angeles, keep these nests ready made.

* * *

Chicken Lore (D. L. E.). Can you tell the readers of the Cultivator if fowls can ever be sold for pure blood, whose mothers of three generations back were with a male of another breed for a time. Also if pullets are mated to the same bird that produced them, will their eggs hatch strong chickens?

In the article you speak of "hooking together" the panels for a chicken yard. How hook them together, do you put on hooks, or do you twist ends of the cut wire?

Your article on "dry feed" in hoppers was just what I wanted to know.

Answer:—First: Fowls whose mothers three generations back were with another male can be perfectly sold as pure breds.

Second: Like produces like, if the parents are vigorous and healthy the off-spring will be also. Should the parents be sickly their offspring will have a tendency to have the same disease, at the same time of year as their parents.

Third: The panels can be hooked together by a small hook and eye at the corners, or, can be tied together by string or wire.

I am glad the article on "dry food" was useful to you.

* * *

Feeding Indian Runners. (Mrs. E. B. M., Hanford, Cal.): Thanking you for your previous information I come to you once more. Will you please tell me what to feed Indian Runner ducks, young ones.

Is it advisable to let them go into the water a day or so after hatching?

Will the lice bother them like they do chickens?

Answer:—The rule for feeding little ducks is: Two parts bran, one part corn meal, one tenth meat meal or beef scraps and always a little sand (about a teaspoonful at a meal, for ten).

Do not let them swim in water until they are eight weeks old, or they will get cramps and very likely die.

When the ducks are very young they sometimes get the big grey head lice from the hen mother. I usually take the hen away from them, if the weather is pleasant, when they are a week old.

* * *

The Moisture Question. (F. X. D., Fullerton): Will you please let me know through the columns of your paper how much moisture is necessary to hatch duck eggs in an incubator and how to apply it. I find many of the ducklings fully developed in the eggs, but only about 10 per cent get out. I kept the moisture trays filled with water after the 15th day. Also at what temperature should the eggs be kept, and how long should they be allowed to cool when turning.

Answer:—It is impossible to answer you fully, as you do not mention the kind of incubator, not even the name. You had better write to the maker of your incubator for full directions for hatching duck eggs.

Duck eggs usually require more airing or cooling off (and also some moisture with warm water) than hen's eggs.

The directions on your incubator will tell you at what temperature you should operate it.

I should "guess" that the reason your ducks do not get out of the shell is that the air space is not large enough, but not knowing your machine it is a mere guess.

* * *

Sanguineous Eggs. (M. C. S., Santa Monica): Found a fresh laid egg yesterday which, on breaking, contained dark blood clot about size of a pea in the white of the egg, and the whole white looked bloody, but the yolk appeared normal. Have never seen anything of this kind before, and am puzzled as to the cause.

Have Barred Rock, Orpington and Leghorns. Feed them rolled barley mainly, with a change to wheat and Kaffir corn in litter for the grain feed, and dry mixture of 2 parts bran, 2 parts alfalfa meal, 1 part feed meal and 1 part meat meal or beef scraps which I keep before them all the time in a hopper, and besides this green food in the shape of weeds, grass and alfalfa.

Would appreciate an answer in your valued department as to the cause of the trouble.

Answer:—Dr. Salmon in his "Diseases of Poultry" says: Occasionally small bloodclots are found in eggs, usually in the albumen. These result from a slight hemorrhage which has generally occurred in the upper two-thirds of the oviduct. Such hemorrhages are the result of great functional activity and congestion of the blood vessels of the reproductive organs. They are excited by any of the causes which lead to congestion and inflammation, and are to be counteracted by green feed, less animal food, and suppression of condiments. They result from use of too much pepper, stimulants or so called "egg foods."

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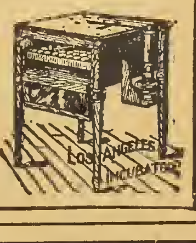

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JUDICIOUS BREEDING

"This subject has frequently been agitated in poultry publications in its application to poultry breeding for the last twenty years, it being an important question to those who seek to fix any particular type or characteristic in their stock; and although the subject is an old one, which has been worked over and over again, from every possible standpoint, still, the question is often asked: "How far is it desirable to breed fowls in and in."

"It has been abundantly proved," says a writer in Fanciers' Gazette, "that by continuing this practice too long a time, or if done carelessly, without selection and discrimination it results in constitutional weakness, decay, reduction in size and loss of fecundity. On the other hand, it has been generally well proved that it is not prejudicial, but advantageous in standard breeding if intelligently practiced, and results in great satisfaction.

"Inbreeding in dogs, cattle or other animals, we leave to those who have studied that branch of reproduction, and confine our remarks to poultry only. It is asserted that in animals, where it is desirable to develop the nervous temperament and mental qualities, crossing is preferable; but in fowls there is nothing gained by great development of brain, and it is a question whether or not this assumption is well founded when the selection of the animals for inbreeding is intelligently made. Then again the extent to which inbreeding can be pursued without injury has been studied, and found to be much slower in injurious results than it has been generally understood to be, where the same has been intelligently practiced, so much so that many are led to believe that it can be carried on indefinitely. The great object of inbreeding is to improve the stock in certain things, as for instance, a peculiar comb, a certain shape, or, fine color or markings. A male, of good form and size, may show remarkably fine coloring throughout, or perhaps may have phenomenally fine markings in some section, something, in fact, far superior to that of the flock in general, or even that found in the best of the breed, and there is a desire to produce it in the flock, which can be attained by carefully mating him with a female, the best one to be had, both in form and color. The next season mate the best of the pullets from this mating, which should show good style and constitution to their sire. The pullets from this mating will be in blood three-fourths of the sire and one fourth of the blood of the first dam, and if the sire is strong in imparting his own characteristics, some of this second generation of females will show his straits strongly, and can be used with hopes of reproducing them generally. Perhaps this is as far as it may be safe to inbreed, but if the old sire still maintains his form and vigor and the last generation shows no signs of degeneracy, then we would again mate him with females carefully selected from the second generation and thus establish in the stock seven-eights of his blood. As a general rule this direct inbreeding should stop here."

"For fresh blood for the foregoing stock, we would procure a female of another family of the breed remote in relationship but possessing the characteristics sought as far as possible, and mate her with a fine male of first generation, which should show the desired straits; and from the males from this mating one can be selected to mate with the females of the third generation and every year thereafter, by introducing fresh blood through an unrelated female, mated with a fine male from the generation last preceding. Keep up the work of improvement, at the same time preserving the constitution and vigor of the flock."

"By breeding two families of the same stock, as herein directed the question of deterioration from inbreeding would be almost wholly obviated, while the uniformity and advancement in quality of stock would be largely under the control of the breeder."

One writer, in the Dakota Farmer, describes his poultry houses as one large room, ample enough to hold his flock. His roosts are constructed so as to pull up out of the way in the day time so the poultry can have the whole house as a scratching shed. His fowls cannot get on the roosts in the day time, for they are out of their reach. In the evening the roosts are lowered and the same apartment is converted into a roosting room. He likes it reasonably warm, but not too warm. In the provision for a scratching pen one must use judgment. In this climate where there are few days that chickens will not be out of doors a double purpose hen house would not be necessary, but still the hen house so arranged as to make a scratching pen in the day time would be all right. and useful provided there is not natural shade for the chickens to go and scratch under.

The eggs for hatching should be only those from well-developed, full-grown pullets or from vigorous hens.

Single Comb White Leghorns and Indian Runner Ducks
Eggs, $1.50 per setting. $6.00 per 100. Send for illustrated catalogue.
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Blue Andalusians
At Los Angeles, 1906, our strain in a class of 68 Audalusians with 16 birds won more firsts than all our competitors combined. Eggs, $1.50 and $2.00 per 14.
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Old and young stock for sale. Eggs after January 1. Write for prices.
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Eggs for sale from Prize Winning **Rhode Island Reds.** Send for circular. **W. Frank Greenleaf, Santa Ana, or 404 H. W. Hellman Building, Los Angeles, Cal.**

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Mrs. F. T. Hungerford, Manager
14 Ribbons at The Last Los Angeles Show.
Indian Runner Ducks' Eggs:—$1.00 per 13, $3.00 per 50, $5.00 per 100. White Minorca and White Wyandotte eggs:—$1.50 per 15, $4.00 per 50, $8.00 per 100. Eggs carefully packed and shipped any where.

Single Comb Brown Leghorns
Exclusively
Stock for sale and eggs for hatching. Eggs from first pen $2.00 per 15 eggs, second pen $1.50 per 15. Incubator lots for $6.00 per 100 eggs. They have always won first prize whenever shown. Large birds and heavy layers.
W. E. Mercer - - Ventura, Cal.

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Eggs and Young Stock in Season
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Eggs $2.50 per setting for balance of season
A few trios at reasonable prices.
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Sales of eggs for hatching average 14,000 per year at $70 per 1000, and the net income per annum for the last four years has been from $1000 to $1500. For further particulars apply to
Captain Mitchell, Rural No. 1, Santa Barbara

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WHITE WYANDOTTES
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Beef Scraps
GUARANTEED ANALYSIS:
Protein 65%
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Made of Cooked and Dried Livers, Lungs, Melts and Clean Scraps. No fertilizer ingredients in **these** Beef Scraps.

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GUARANTEED ANALYSIS:
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A perfectly balanced ration for the growing chicks. All pure food, no filler, no waste, hence cheapest, Keeps them growing and healthy. Made by
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Fine Feathers alone do not make the profitable hen. Our fowls have the reputation of being ***extra large, handsome*** and ***extra heavy layers.*** Last season, our eggs averaged over 95 per cent. fertile. ***Remember***—In getting eggs from us, you do not get them from the general runs. We have but one grade of eggs to sell for hatching and those are from our breeding pen composed of only the choicest fowls, selected from hundreds that are ***bred to lay.*** Hens that approach the ***200 egg record.***
Price of Eggs—$1.50 per 15, $5 per 100. ***Send for Illustrated Catalogue. Address,***
LEO. W. MARDEN, Manager

CLEANING THE BROODER.

When I first began to use brooders I tried many ways of bedding them, so they could be cleaned easily, and quickly, as well as thoroughly. I used sand, but that got damp and "balled" on the toes of the baby chicks. Then I tried chaff, oats-chaff collected where the separator stood when the oats were threshed. That did pretty well, but the floor where the chaff was scratched away, would get very much soiled. Then I tried carpeting the brooder with grain sacking, cut the sacks open, then fit them to the floor of the brooder, tacking them snugly to place, (don't drive the tacks in too far, so they will be hard to pull out again,) as you would a carpet in a dwelling.

Over this scatter whatever you have for scratching material. Here I use alfalfa chaff, in Illinois I used that from the oats. Put it in rather lightly at first when the wee biddies are somewhat uncertain on their feet, though be sure to put in enough to cover well. This catches the droppings, and you will be surprised how clean the sacking will remain. Every morning I take dust-pan and a whisk broom, and brush up the litter, taking it out of the brooder on the pan. Any thing that may cling to the sacking may be scratched loose with a chip or trowel, (I have an old masons trowel,) and a brisk brushing with the whisk broom will make it look fresh and clean. When this is done, I put in fresh litter, and my brooders are sweet and pure, with no foul odors, and the work has only taken five or six minutes times to each brooder. They will not need fresh "carpet" more than once in two or three weeks, when the brooder should then be washed free of all stains and dirt, sunned and dried carefully. Another advantage of the cloth over the floor is giving the newly hatched chicks a firm footing, and thus preventing them slipping till some are cripples from over-stretched muscles. You have all seen—I am sure—little chicks sprawling about, unable to draw their feet together and stand firm upon them. Any hard surface upon which they stand, or run, is apt to make them slip, and they cannot regain their footing quickly.

The greatest factor in the health of brooder chicks is cleanliness, and the busy woman will hail with joy, any plan to secure that, with the least work. And "busy woman" spells the name of every poultry woman, for the next three months, and if she is also housewife, friend and neighbor, I think it would be "busiest woman." But even if you are the last named, don't, please don't, forget to keep a record of the number of chicks you take off this year, and send it to the editor this fall. The "ranch mistress" adds no small amount to the annual income, by her sale of eggs and fowls, to say nothing of the saving on the meat bills, by the eggs and chickens served on the home table.

I have been having a good deal of trouble lately trying to keep track of my turkeys. They are White Hollands and not very "prone to wander," still they do like to slip away into secluded places to make a nest.

There came to my notice the device of one woman to tell the whereabouts of her turkeys, that I consider most excellent. 'Tis nothing else than a small bell attached to each turkey hen, thereby to track her, and also to frighten away any animal that seeks to disturb her on her nest, or with her young poults. I am going to try it when my turkey hens set, later on. Just now their eggs are being tucked under quiet, broody Brahmas, but after a while I will let each turkey hen incubate her own eggs, though I think I will give them to a Brahma to raise. They perform the task for me much better than does the turkey hen.—Mrs. W. B. Chandler in N. W. Horticulturist.

TREATMENT OF ROUP

Wallace's Farmer says the one symptom of roup which is unmistakable is the peculiar sickish smell which accompanies it. Once recognized it is impossible to mistake it, and the wise breeder at the first whiff of a roupy smell in his hen houses looks over his flock, clears out all suspicious subjects, disinfects the house with carbolic acid or any other convenient disinfectant, provides fresh litter, and gives a tonic to the flock. We have found onions or a feed of grain soaked in kerosene as good tonics as expensive drugs, and more convenient.

Aside from the smell the symptoms of roup are one or all of the following: Cancerous running sores break out on the head, in the mouth and throat, with a watery discharge which becomes firmer in character and more offensive in odor. The diseased secretions finally kill the bird by suffocation. The treatment is to remove the ulcers, apply powdered borax or pyrozone (peroxide of hydrogen), and mix a teaspoonful of powdered sulphur in the food. Repeat twice a day. Give nourishing food.

GREAT INDUSTRY.

It is no insult to be called a chicken crank or poultryman. Those who have allied themselves with the little hen have joined forces with an industry that makes gold mining sink into insignificance.

The poultry and egg business in the United States amounts to $280,000,000 a year while the hog can only root up the sum of $186,529,035. Yet the hog is known as the mortgage lifter of the country—and he is that. It is not to belittle the hog but to help you appreciate the hen that we make this comparison. But the poultry business is nothing in comparison with what it can easily be made, in the next ten years if the experiment stations and farmers' institutes would show the hen up at her true value. Nearly all stations are reporting on hogs, cattle and sheep, and only two or three actually trying to find out what can be done with the hen. Every farmers' institute program discusses hogs, cows, corn and crops, while few ever give one hour to the discussion of the poultry interests. For the amount of care and food given what on the farm makes such a showing in profits as the insignificant, much-neglected hen? Give her better attention for she merits it.—Successful Farming.

Blue Andalusian Eggs
$1.50 for 15, $6.00 per 100. Free range. I raised and sold cockerel winning first prize at late L. A. poultry show. Stock. ***Mrs. J. S. Duff, 3145 S. Hoover St., Los Angeles, Cal.***

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I guarantee 100% fertile. Write for prices.
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Mrs. Albert Miller,
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White Wyandottes.
High scoring stay white birds. 1st Cock L-A. 1906 show and other winners. Eggs $1.50 to $3. per 13. $10.00 per 100. Mount Holly Poultry Yards, Hollywood, Cal. E. W. Preston, Prop., Sunset, Hollywood, 901.

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Prize-Winning, Egg-Laying, Wealth-Producing Strain.
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From prize winning and egg producing strains. Eggs, $1.50 and $2.00 per 15; incubator lots, $6.50 per hundred.
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Eggs for hatching from the famous J. W. Miller strain, Freeport, Ill. $1.25 per 15
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White Wyandottes and S.C. White Leghorns
Good layers. Trap nests used, Eggs: Wyandottes $1.50 to 2.50 per 15. Leghorns $1.50 per 15.
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You must first of all provide comfortable quarters.
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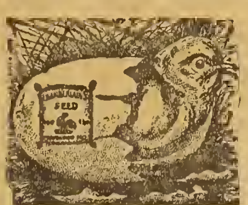

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World's Chick Feed of To-Day. The only original **Dry Chick Feed.** All others are worthless imitations. **Chamberlain's Perfect Chick Feed** was used exclusively at the great St. Louis World's Fair during the 7 months. This the highest compliment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.

"Nothing Just as Good"

CHAMBERLAIN'S PERFECT MASH EGG FEED,
THE WORLD'S GREATEST EGG PRODUCER.

GERMAIN SEED CO.,
Pacific Coast Agents. LOS ANGELES, CALA,
SPECIAL PRICES ON TON LOTS.
Distributing Agents: FREDERICK BROWN, San Jose; CHAS. H. NEARPASS, San Diego; CHANNEL COMMERCIAL CO., Santa Barbara and Ventura.

General Agriculture

LEGUMES AS FERTILIZERS.

The formation of nitrogen by bacteria in the nodules on the roots of leguminous plants is such a well known and accepted fact that any assertion to the contrary is rather alarming.

Mr. Thomas Jamison ,Director of Research for Aberdeenshire, Scotland, has dropped a bomb-shell on the tubercle and nitrogen theory we have hitherto accepted as gospel. His annual report is just published and the Cultivator, always desirous of presenting the latest intelligence in the agricultural world, gives the following brief resume of his conclusions and leaves its readers to digest the statements made. These statements are considerably at variance with the conclusions of our own government experts:

1. "The legume tubercle theory is untenable.

2. "Nitrogen of the air is directly utilized by the plants."

In support of the first he says:

"In the first place there is the accepted fact that vigorous legumes may be grown without bearing tubercles, a fact, which as legumes always acquire nitrogen, goes far to show that the tubercles have nothing to do with the fixation of nitrogen.

"There is the other fact that the tubercles contain a fungus, which is sufficient to account for all the features shown by the tubercle, and as the weight of evidence in regard to fungi goes to show that fungi do not absorb nitrogen, it may be accepted that the fungus has nothing to do with the large fixation of nitrogen by legumes.

"Further we have seen that there is nothing exceptional in legumes having tubercles, for fungi cause similar tubercles on many plants. Even the large number and frequency of these tubercles on legumes need cause no surprise—it is the natural result on a nitrogenous plant of a nitrogen-seeking fungus, just as turnips are ruinously attacked by a fungus that causes club-root disease.

"The absence of bacteria in the tubercles being practically proved, or at least, the assumed evidence of their presence being reduced to nothing, the idea that bacteria fix the nitrogen comes to naught.

"It follows that the idea of symbiotic (mutual help) action has also to be set aside."

In support of the second conclusion he says that by chemical reagents he has found that the hairs, glands, and leaves with thin skins are the great agents in fixing nitrogen, and his experiments, with the illustrations published, would seem to prove the truth of his assertions.

Mr. Jamison has not produced sufficient proof to support his assumption that the legume theory is wholly untenable. There has no doubt been a great amount of rubbish published about the nitrogen fixing property of bacteria and much money has been spent in buying bacterial material to aid in the production of larger crops. Much of the material sold has for various reasons proven utterly worthless, and those interested may with profit consult the latest U. S. Agricultural reports anent this particular point.

It is nevertheless true that leguminous plants do render fertile, soils robbed of their nitrogen by other crops. The habit of planting beans for this purpose is probably almost as old as agriculture itself. The writer has seen printed references to this habit as early as 1665 and the manner of reference would indicate that it was no new custom. In the old world beans used for this purpose are always reaped so that the nitrogen stored in the leaves are not applied to the soil. The nitrogen must then have been in some measure stored in the roots. Jamison makes no reference to the possible transference of all the nitrogen fixed by the leaves to the root, and the truth or otherwise of his assertions shall be found to depend on this point.

To the practical agriculturist and gardener his conclusions are very valuable. They show again that to reap the full benefit of the nitrogen stored by growing crops these crops ought to be ploughed under while in early growth and also that it is quite superfluous to apply nitrogenous manures to root crops as they can form their own nitrogen, but cereals and grasses require much nitrogen. Rape, he suggests, will prove as valuable as leguminous crops for fertilizing purposes.

GROUND AND CUT ALFALFA.

The Colorado Experiment Station has completed an experiment in which a comparison between alfalfa cut in lengths of half an inch and alfalfa ground was made in the fattening of pigs. It required 4.77 pounds of corn and alfalfa, mixed at the rate of three pounds of corn to one of alfalfa to produce one pound of gain, while 4.81 pounds of corn and ground alfalfa, mixed in the proportion of three parts of corn to one of alfalfa were eaten for one pound of gain, not counting labor. With cut alfalfa costing $8 a ton and ground alfalfa $16 a ton, the cost producing 100 pounds of gain with the former was $2.62 and with the ground alfalfa $3.12. With corn and cut alfalfa fed in equal parts by weight, the cost of producing 100 pounds of gain was $2.72. With corn and ground alfalfa fed in equal parts by weight, the cost was $3.69. These results go to show, says the report of the experiment, that at the prices quoted cut alfalfa is more economical to feed than ground alfalfa, and that a ration consisting of three-fourths corn and one-fourth alfalfa is cheaper than one consisting of half corn and half cut alfalfa for fattening pigs. Grinding alfalfa is an expensive process, and it is doubtful if machinery can be improvised which will grind it as cheaply as it can be ground by animals.

FARMERS' HORSE COMPANIES NOT A SUCCESS OUT WEST.

Writing in the Rural New Yorker, a farmer says: "I have been in a French Coach Company, $30,000 horse, 15 stockholders. We paid half too much in the first place; same horse could have been bought for cash for one half the money by dispensing with the organizer, who had to be paid to do the work. But farmers, with us at least, will subscribe $3000 to a stranger's proposition quicker than to raise $1000 and send a good man or two of their neighbors to buy what they want. The keep of a company horse is greater than of one privately owned, as it does not take all of the man's time to take care of a horse, and he can do some of his own work besides. They are generally kept by men who own or are interested in other stallions, and some of the high-priced company horse's business is knocked down by keepers in favor of some cheaper horse, but just as good. The service fee is not paid nor collected as promptly as where one man has it all his way. The colts do not pan out; the Coach is not as prepotent as either the Percheron trotter, running horse or Morgan. Colts take too much after mares in size, shape and color, thus dissatisfying breeders who quit after a trial of horse. Interest and insurance still going on with keep soon makes it a losing proposition. The three or four good men in the company have eventually to pay the delinquent's share of which there are always some in those companies. In Kansas they had the same experience and you can never get a man that has been in one of those companies to join another, unless it be the keeper.—A. D.

FOREST PLANTING STATIONS.

Seven different States now have eight forest experiment stations, established during the past year, for co-operation between the Forest Service and State forest commissions and agricultural colleges. These stations are designed to meet the growing demand for detailed information on the propagation of forest trees in various regions.

As a result of regional studies and special investigations, the Forest Service is already in possession of very complete data on tree growing for protection and timber supply, and this information is gladly supplied upon request. There are many questions, however, regarding new species, nursery methods, mixtures, spacing, and cultivation which can not be satisfactorily settled by studies of existing plantations. These matters will be investigated by a long series of systematic experiments, now under way at the new stations.

The co-operating institutions in most cases contribute the necessary land, and share all expenses for material and labor equally with the Forest Service. The Service passes upon all plans and directs the general operations. The results are the joint property of the co-operating parties.

The outcome will be to determine the regional adaptability of new species and the influence of soil and location on the selection of species, and to secure silvicultural data on methods of planting and cultivation. At Berea, Ky., particular attention will be given to the propagation of hickory, a wood for which no satisfactory substitute is known and for which the demand is destined soon to outstrip the supply. On the plains and prairies the trees will be tried which promise to be the most useful to the farmer under the local conditions. Experimental blocks will be planted annually, but many years will undoubtedly be required before completely satisfactory final results will have been attained.—Press Bulletin No. 125, Forest Service.

A man entered a restaurant, took a seat, and, after a little deliberation, asked the waiter for "a plate of fly-specks." The waiter reported the uncomplimentary request to the proprietor, whereupon the latter approached the customer and informed him that they did not serve "fly-specks." "Then," was the reply, "why don't you take them off the bill of fare?"

HAYING TOOLS
WE HAVE THE BEST LINES ON THE MARKET
Standard Mowers
Sandow Champion Rakes
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WRITE US FOR DESCRIPTIONS AND PRICES
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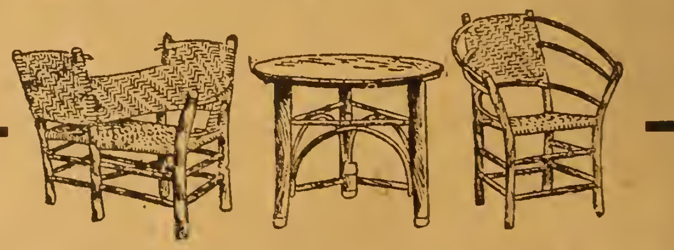

GENUINE OLD HICKORY
FOR SUMMER COMFORT ON THE PORCH OR LAWN

The warm weather of the summer months will soon be with us and we will all improve every opportunity to adjourn to a shaded porch or lawn to enjoy the summer breezes and the comforts of an easy chair or rocker.
The old Hickory furniture is the most suitable for out-of-door use. It is strong, durable and comfortable. We are now showing a large line of exceptionally well made pieces of the genuine old hickory, which we would like you to see.

Niles Pease Furniture Company
439-441-443 S. Spring St., Los Angeles, Cal.

Queries and Replies

MUSTARD SEEDS.

W. W. G., Santa Maria, wishes to know market and price for mustard seed. Who can tell him?

RUSTY TOOLS.

Editor Cultivator: I have some "rusty" bits, which I use quite often for boring. They have frequently been left exposed to the weather and consequently have become rusty. They are sharp, but owing to the rust they do not do good work as the rust causes too much friction. What method would you suggest to adopt in removing the rust. I am afraid to tackle them for fear of ruining them. Please advise me in this matter and oblige. A. B. G., Ukiah.

One of the most experienced cutlers on the coast states that only acids which will eat the steel will clean off the rust. Better oil them to prevent further rust, and in future take better care of them.

TO FRUIT GROWERS.

Professor Wickson of the State University has sent out letters to the farmers of the State asking their advice as to the requirements desired in the new varieties of fruit in California. Professor Wickson has been asked to speak at the annual convention of the Association of American Nurserymen soon to be held in Texas. It is his purpose to gather data for the subject of his speech. The letter sent to the farmers of California follows:

Dear Sir: I have accepted an invitation to prepare a paper for the annual convention of the Association of American Nurserymen which will soon be held in Texas, and have chosen this subject: "Specific Requirements of New Varieties in California Fruit Growing." My idea is to present to this great society the fact that California fruit growers, shippers and preservers do not need new varieties which are simply novelties which might please amateurs, but there is a demand for new varieties which will remedy some defects in the present standard varieties and for new varieties which will lengthen the season or fill in gaps in ripening between varieties now grown largely. It seems to me this will attract the attention of plant breeders and help them to produce something which could be profitably added to reduce the present disposition of new planters to plant too many varieties and to plant many novelties instead of concentrating upon those varieties which the great commercial handlers of fruit need in their industries. Will you kindly assist me in this undertaking you are interested in, which you will find to be by naming the varieties of each fruit worth the most money, and what points a new variety of any particular fruit should have to be valuable? The sheet I send herewith gives places for observance of this kind. I do not desire to ask too much; please report upon few or many fruits as you find convenient. A report even upon a single fruit which you are most interested in would be very valuable.

Very respectfully,
E. J. WICKSON.

The attached sheet referred to in the letter is a blank which the agricultural expert wishes the farmers to fill out. It contains a list of all the well known varieties of fruit. The producer is asked to name the best of the old varieties of fruit and what points are desired in new varieties.

DURUM WHEAT.

Desiring to learn the results of experiments made by the farmers of the State who have planted "Durum wheat", the State Agricultural Society asks all growers of this particular variety to forward information. Any farmer who has experimented with this wheat is requested to write J. A. Filcher, secretary of the State Board at Sacramento. It is claimed for this particular variety that it is less liable to rust, produces a larger yield, makes more flour to the bushel and better bread than the best of other known varieties. If true, this information should be widely disseminated for the benefit of wheat growers generally and thereby induce wider cultivation.

THE HIGHWAY COMMISSION.

Editor Cultivator:—Within the last six weeks the milestones have been placed on the Whittier road and on the San Diego road and sometime previously on the San Fernando road and the Los Angeles and San Bernardino road via El Monte. Already reports come to the Commission of malicious destruction of the stones by ill disposed persons who use the stones for targets for their rifles. At the last meeting of the Commission action was taken to request the Supervisrs to take measures to protect the milestones and road signs by enforcing the law. The president and Mr. Hille were appointed a committee to call the attention of the board and of the District Attorney to this wanton destruction. The District Attorney informed the committee that the statutes provide that such destruction constitutes a misdemeanor which is punishable by a fine not exceeding $500, or imprisonment not exceeding six months.

The Highway Commission desires to call attention of all concerned to this provision of law and it will use all means in its power to enforce the law.

The officers of the commission will be very thankful for any information that will lead to the arrest and conviction of any person shooting at or otherwise injuring or destroying any milestone or roadsign erected by it.

ALFRED P. GRIFFITH,
President.
C. L. LOWMAN,
Secretary.

In this issue appears the advertisement of A. W. Oliver as a real estate dealer at Long Beach. Mr. Oliver will be remembered by many Cultivator subscribers, he having been one of our representatives for two years. In real estate, as well as in other business, Mr. Oliver will give every man an absolutely square deal.

CRAINS USED IN CEREAL FOODS.

Continued from first page.

whole. The slightly crushed grains with the bran left on are called cracked wheat or wheat grits. Wheat is also rolled or flaked, and is shredded by a special process. The majority of our wheat breakfast foods seem to contain at least a part of the middlings, farina and gluten preparations being the main exceptions.

Wild rice (Zizania aquatica), also called Indian and Canada rice and water oats, is a handsome reed-like water grass native in North America, found as far south as Texas and north into Canada, being especially common in the north-central United States and south-central Canada. The Indians have long used its seeds for food, gathering the crop and parching it to improve the keeping qualities and flavor. Their white neighbors, and especially sportsmen, have more and more followed their example until wild rice has become a well-known food in the regions where it is abundant and has found its way to many clubs and homes and is now seen on the menus of some fashionable hotels, where it is served not only with game but also as a special cereal dish. It gets its name from a very slight resemblance to real rice, the seeds being longer, thinner, and darker in color than the latter, and having a more pronounced flavor. It requires much longer cooking than ordinary rice.

Wanted, a man to take charge of a cattle ranch; a first class man. So runs an advertisement in this issue, headed, " a position as herdsman." The Cultivator has many subscribers, over ten thousand, many more who read the paper, probably four readers to every paper printed, over forty thousand, but among the number who can tell our advertiser where the right man can be found. In this as in all other lines of business, except in few cases, the first class man is working for himself. Occasionally exceptional circumstances prevail and the man can be found. Who wants the job?

EARLY LAYING PULLETS.

A Minnesota pullet began laying when she was four months and eleven days old. A pullet in Pennsylvania dropped her first egg when she had reached the age of three months and 26 days. Numerous reports of a similar nature have been reported from the poultry yards of the Pacific northwest. What is your experience in this line?

Griggs—Have you ever been through the Holy Land?

Briggs—I've been over the golf links—Boston Transcript.

SAN FRANCISCO FIRMS.

In addition to the business firms heretofore mentioned the following San Francisco houses are located (some temporarily) as below given. Most of them are old time advertisers in this paper, some are now represented and others will be as soon as they are ready for business:

Whittier, Coburn & Co, are now located at 2028 Jackson street.

The Joshua Hendy Machine Works have opened an office temporarily at Bay and Kearney streets.

Trumbull & Beebe, seed store, will be found at 416 Jackson street.

C. M. Wooster & Co., real estate, have opened offices at 1166 O'Farrell street.

The Falls Manufacturing Co. have opened offices in the Baker Block, Berkeley.

Cutter Analytic Laboratory, temporary address, Grayson and Sixth streets, Berkeley.

Chatfield & Vincent, real estate, Grove street and Van Ness avenue.

Heald's Business College, temporary address, 1451 Franklin street.

Woodin & Little are now located temporarily at 701 Scott street.

Beck, Wakefield & Co.'s address is now at 2323 Fillmore street, San Francisco, and also at 205 N. Los Angeles street, Los Angeles.

W. E. Draper, representing the Cypher's Incubator Co., formerly on Sansome street, is now located at Third and Linden, Oakland.

A BIG SALE OF DAIRY CATTLE

Messrs. Rhoades, Reed & Rhoades the Los Angeles auctioneers, will pull off a big sale of live stock next Tuesday at Watts, a few miles south of Los Angeles. This will be one of the biggest sales of dairy cows in Southern California and will doubtless draw a large number of buyers.

Messrs. Rhoades, Reed & Rhoades are favorite auctioneers with many stockmen and are known as thoroughly reliable people to whom it is safe to tie.

The sale begins at 10 o'clock next Tuesday morning and will continue till the 100 dairy cows and twenty work horses, driving horses and implements are sold.

See ad. in another column for particulars.

A big bunch of Petaluma Incubators went up in smoke in San Francisco, but before another season comes around the big Petaluma Company will be stocked up as big as ever. You can't down a good incubator and the Petaluma is it. Meantime fire nor earthquake can not jar the Petaluma ad. out of the Cultivator.

Long Beach Realty
Bought, sold and exchanged. Letters of inquiry promptly answered. Address
A. W. Oliver, P. O Box 292, Long Beach, Cal.

RANCH PROPERTIES We make a specialty of handling country property. Do you wish to buy, sell or exchange? Write us. *White & Newby, 404 H. W. Hellman Building, Los Angeles, Cal.*

RANCHES WANTED *For Our Clients*
BURR-PADDON CO.
Temporary Office, 1909 Fillmore St. San Francisco, Cal.

FOR CLEANSING MILK CANS, BOTTLES, AND ALL DAIRY UTENSILS
AS WELL AS ANYTHING IN THE KITCHEN OR LAUNDRY **20 MULE TEAM BORAX**
Is Unsurpassed. Sold by all dealers in packages. ☞Send for Free Sample.
PACIFIC COAST BORAX CO., Room 80, Bacon Bldg., Oakland, Cal.

Household Department

THE FARMER SAT IN HIS EASY CHAIR.

The farmer sat in his easy chair,
Smoking his pipe of clay,
While his hale old wife, with busy care,
Was clearing the dinner away;
A sweet little girl, with fine blue eyes,
On her grandfather's knee was catching flies.

The old man laid his hand on her head,
With a tear on his wrinkled face;
He thought how often her mother, dead,
Had sat in that self-same place.
As the tear stole down from his half-shut eye,
"Don't smoke!" said the child; "how it makes you cry!"

The house-dog lay stretched out on the floor,
Where the shade after noon used to steal;
The busy old wife, by the open door.
Was turning the spinning-wheel;
And the old brass clock on the mantel-tree
Had plodded along to almost three.

Still the farmer sat in his easy-chair,
While close to his heaving breast
The moistened brow and the cheek so fair
Of his sweet grandchild were pressed;
His head, bent down, on her soft hair lay;
Fast asleep were they both, that summer day!

Charles Gamage Eastman.

A COURTEOUS MOTHER.

During the whole of one of last summer's hottest days, I had the good fortune to be seated in a railway car near a mother and four children, whose relations with each other were so beautiful that the pleasure of watching them was quite enough to make one forget the discomforts of the journey. It was plain that they were poor; their clothes were coarse and old, and had been made by inexperienced hands. The mother's bonnet alone would have been enough to have condemned the whole party on any of the world's thoroughfares; but her face was one which gave you a sense of rest to look upon—it was so earnest, tender, true and strong. The children—two boys and two girls—were all under the age of twelve, and the youngest could not speak plainly.

They had had a rare treat. They had been visiting the mountains, and they were talking over all the wonders they had seen with a glow of enthusiastic delight which was to be envied. In the course of the day, there were many occasions when it was necessary for her to deny requests, and to ask services, especially from the oldest boy; but no young girl, anxious to please a lover, could have done either with a more tender courtesy. She had her reward, for no lover could have been more tender and manly than was this boy of twelve.

Their lunch was simple and scanty; but it had the graces of a royal banquet. At the last the mother produced three apples and an orange, of which the children had not known. All eyes fastened on the orange. It was evidently a great rarity. I watched to see if this test would bring out selfishness. There was a little silence—just the shade of a cloud. The mother said: "How shall I divide this? There is one for each of you, and I shall be best off of all, for I expect big tastes from each." "Oh, give Annie the orange; Annie loves oranges," spoke out the oldest boy, with the sudden air of a conquerer, at the same time taking the smallest and worst apple himself. "Oh, yes, let Annie have the orange," echoed the second boy, nine years old. "Yes, Annie may have the orange, because that is nicer than the apples, and she is a lady, and her brothers are gentlemen," said the mother, quietly.

Then there was a merry contest as to who should feed the mother with the largest and most frequent mouthfuls. Annie pretended to want apple, and exchanged thin, golden strips of orange for bites out of the cheeks of Baldwins. As I sat watching her intently, she sprang over to me, saying, "Don't you want a taste too?" The mother smiled understandingly, when I said: "No, I thank you, you dear, generous little girl; I don't care about oranges."

At noon, we had a tedious interval of waiting at a dreary station. We sat for two hours on a narrow platform, which the sun had scorched till it smelt of heat. The oldest boy held the youngest child, and talked to her, while the tired mother closed her eyes and rested. The two other children were toiling up and down the banks of the railroad track picking ox-eye daisies, buttercups and sorrel. They worked like beavers, and soon the bunches were almost too big for their little hands. Then they came running to give them to their mother. "Oh, dear," thought I, "how that poor, tired woman will hate to open her eyes! She never can take those great bunches of common, fading flowers, in addition to all her bundles and bags." I was mistaken. "Oh, thank you, my darlings! How kind you are! Poor, hot, tired little flowers—how thirsty they look! If they will only keep alive till we get home, we will make them very happy in some water, won't we? And you shall put one bunch by papa's plate and one by mine."

She took great trouble to get a string and tie up the flowers; and then the train came, and we were whirling again. Soon it grew dark, and little Annie's head nodded. Then I heard the mother say to the oldest boy: "Dear, are you too tired to let little Annie put her head on your shoulder and take a nap? We shall get her home in much better case to see papa, if we can manage to give her a little sleep." How many boys of twelve hear such words as these from tired, overburdened mothers? Soon came the city, the final station, with its bustle and noise. I lingered to watch my happy family, hoping to see the father. "Why, papa isn't here!" exclaimed one disappointed voice after another. "Never mind," said the mother, with a still deeper disappointment in her tone; "perhaps he had to go to see some poor body who is sick."

In the hurry of picking up all the parcels, the poor daisies and buttercups were left forgotten in a corner of the rack. I wondered if the mother had not intended this. May I be forgiven for the injustice! A few minutes after, I passed the little group, standing still, just outside the station, and heard the mother say: "Oh, my darlings, I have forgotten your pretty flowers. I am so sorry! I wonder if I could find them, if I went back. Will you all stand still and not stir

NECESSITY vs. LUXURY

The day has gone by when the farm telephone is considered a luxury—time was and not so long ago at that, when a telephone in a farm-house was looked upon as such. ***Today it is a necessity.***

THE WILLIAMS FARM TELEPHONE

has had a lot to do with bringing about this change, making it easy for the farmer to form his own telephone company at no great cost—keeping him ever in touch with his doctor, dealer, banker, freight-agent, and all others in a business way—to say nothing of the social side, putting him in communication with his neighbors at will. Think it over and write us for booklet "Over the Wire."

THE WILLIAMS TELEPHONE & SUPPLY CO.
1067 OAK ST., OAKLAND, CAL.
133 CENTRAL CLEVELAND O.

WILLIAMS

Portable Buldings

Made in all sizes and for all purposes. Cut shows No. 48, 4-Room House, size 12 feet 4 5-8 inches wide, 24 feet 4 5-8 inches long, height of walls 7 8 or 9 feet.

Send for Our Catalogue, which gives photographs, prices and weights of other buildings.

Burnham-Standeford Co., 522 First St., Oakland, Cal.

BURN AIR AND SAVE FUEL

You can do it with the

HAGUE IMPROVED DOMESTIC OIL BURNER

It burns more air than any other burner on the market. Can be fitted to stoves, ranges, furnaces, and all kinds of heating systems. Simplest and most economical burner on the market. If you want the most heat for th least money, write for information to

Hague Domestic Oil Burner Co, 810 So. Spring St., Los Angeles, Cal.

A Delightful Way to Go East

Is Via The

Scenic Salt Lake Route

Some day you will go Back East again. Perhaps this summer. When you do, why not go over the new short line to Salt Lake City, thence ov r the Union Pacific or the Rocky Mountain Scenic Line, Denver & Rio Grande. There's

BEAUTIFUL SCENERY along the line through California, Nevada and Utah. 'Tis not entirely a desert region. You will be surprised when you see the reality.

SEE SALT LAKE.—No extra expense is necessary to stop over a day at Salt Lake City. There's much to interest you in the old Mormon City.

THROUGH SLEEPERS are run on both Salt Lake Route trains from Los Angeles. THE LOS ANGELES LIMITED with standard and tourist runs solid though to Chicago via Ogden, Union Pacific and North Western lines. There's nothing finer in train equipment.

SALT LAKE ROUTE

THE OVERLAND carries every day tourist sleepers from Los Angeles to Chicago via D. & R. G. & Burlington Route, to St. Louis via Union Pacific & Wabash Railroads and to St. Louis twice a week via D. & R. G. & Missouri Pacific Railways. There is also every day a Standard Sleeper through to Denver via D. & R. G.

DINING CARS are carried on both THE LOS ANGELES LIMITED and OVERLAND in which meals are served a la carte. You pay for what you want at reasonable prices and the service is the best possible.

EREE CHAIR CARS are run on THE OVERLAND to Salt Lake City connecting with similar cars on other lines there. These cars are very comfortable. Save sleepers expenses if you wish.

EASTERN EXCURSIONS at much reduced rates will be run by the Salt Lake Route this summer. From all stations in California tickets will be sold as follows for round trip:

May 25, 26 and 27—New Haven, Conn. Rate 92 10. Return limit Aug. 31st.
June 6 and 7—Louisville, Ky Rate $75.75. Return limit 90 days.
June 6 and 7, July 2 and 3, August 7, 8 and 9.—Chicago and Duluth $72.50. St. Paul and Minneapolis, $70 00. St. Louis, Memphis and New Orleans, $67 50.
Missouri River points and Fort Worth and Houston, Tex., $60 00.

Also reductions to Atlantic Coast Cities. See Salt Lake Route agents for full particulars and plan your trip to travel over this route either going or returning.

T. C. PECK, A. G. P. A., Los Angeles, Cal.

COLONIST RATES TO CALIFORNIA

Santa Fe

Will be in effect every day, Feb. 15 to April 7, and Sept. 15 to Oct. 31, 1906, from all points in the east and south.

Following are a few:

Chicago	$33.00	Kansas City & Leavenworth	$25.00
St. Louis	30.00	St. Joseph & Atchison	25.00
Galveston	26.45	Council Bluffs & Omaha	25.00
Dallas, Houston and Fort Worth			25.00
Nearly all points in Kansas, Oklahoma and Indian Territory			25.00

Colonist rates are also in effect from all points east of Chicago and south of the Ohio river.

Santa Fe Agents in California will take deposits of money to cover price of tickets, which will be promptly furnished to passengers at any point from which these rates are in effect.

California illustrated literature mailed free to any address or may be had from Santa Fe representatives.

Tourist Sleeping Car Lines

Colonist tickets are honored in tourist sleeping cars which run via the Santa Fe to Los Angeles and San Francisco.

from this spot, if I go?" "Oh, mamma, don't go, don't go. We will get you some more. Don't go," 'cried all the children. "Here are your flowers, madam," said I. "I saw that you had forgotten them, and I took them as mementos of you and your sweet children." She blushed and looked disconcerted. She was evidently unused to people, and shy with all but her children. However, she thanked me sweetly, and said: "I was very sorry about them. The children took such trouble to get them; and I think they will revive in water. They cannot be quite dead." "They will never die!" said I, with an emphasis which went from my heart to hers. Then all her shyness fled. She knew me; and we shook hands, and smiled into each other's eyes with the smile of kindred as we parted.

As I followed on, I heard the two children, who were walking behind, saying to each other: "Wouldn't that have been too bad? Mamma liked them so much, and we never could have got so many all at once again."

"Yes, we could ,too, next summer," said the boy sturdily. They are sure of their "next summers," I think, all six of those souls—children, and mother, and father. They may never again gather so many daisies and buttercups "all at once." Perhaps some of the little hands have already picked their last flowers. Nevertheless, their summers are certain. Heaven bless them all, wherever they are!

HELEN HUNT.

FOUNDING THE HOME

Having chosen a life companion and laid the foundation for a home, the aim of both husband and wife should be to make it a happy home.

This will require more or less of the giving up of self, of living self sacrifice, of yielding one to the other, of forbearing the hasty word of criticism or censure under trying circumstances. Yet, if the marriage relation was assumed as the result of true love, no sacrifice that one makes for the other will seem a hardship.

Self-sacrifice should not be carried so far as to become self-immolation—sacrifice does not mean effacement.

The founders of a home labor together for the good of the home, for the permanent comfort and happiness of the family. And if one is ready to bear all the burdens and all the privations, that one is doing both the greatest harm, and undermining the foundation of their happiness. Such a course will not only result in cultivating thoughtlessness and selfishness in the one who is too much shielded and favored, but also in the wrecked health and happiness of the one who is so unselfishly thoughtless of self as to thus jeopardize the interests of both and the home.

There should be a just and proper adjustment of the home work and responsibility. Because the husband works out-of-doors or away from home a certain portion of the day, should not free him from all duty indoors or when with his family. The average woman works in the home as hard as her husband does outside, and when he comes in has a right to expect him to share the indoor cares and responsibilities, especially the care of the children.

A husband and father who thus shares the care of the home and family ,always receives a warm welcome, enjoys the confidence of his children and goes to his work strengthened by the assurance of the love and appreciation of his efforts.

Compare the home of such a father with that of the man who takes upon himself none of the responsibilities of the home except that of its provider, where the wife is weary, overworked and discouraged, lacking his help, sympathy and encouragement, and the children indifferent save as they fear him, and say which yours shall be.

The rights of each as individuals must be respected if there is to be a continuance of mutual love and respect. The right to the person is a sacred right, and one that should never be invaded. And each has an equal right to the income, which, although it comes in direct response to the husband's efforts, is no less that of his wife; because by making her the keeper of his home and the mother of his children, he has taken away her earning capacity in the outside world, and she renders for him services that could not be secured in kind for any wage. It is, therefore, only right that she have an equal share of the income after providing for the needs of the family and home, to use as freely and independently as the husband his share. Where the wife thus shares the income she seldom cares to draw out her share if her husband is a careful manager, preferring to leave it as a common sum to be put by for a rainy day, or for a purpose in which both are interested. But it greatly increases her feeling of usefulness and her self respect to be considered her husband's partner in his business as well as in his home.

The management or mis-management of the children is the rock upon which many homes are ship-wrecked. Unless the parents are united in the course to be pursued in rearing and training the family, shipwreck is sure. If one is too lenient and the other too severe, the greatest harm results. The children run in terror and pain from one, for comfort to the other, and an entire lack of harmony and discipline results.

Neither parent should criticise the course of the other within the hearing of the children. If not agreed as to the course to be pursued, or if one feels that the other is unjust or unkind, it is better that the injustness and unkindness be borne rather than undermine the child's confidence and respect in either parent's judgment by criticism. Only sorrow can be expressed in such a case for the misconduct that required discipline.

In a quiet hour the parents should talk over the matter together and decide upon a future course in which each shall have the full confidence and co-operation of the other.

The best way to teach children to respect their parents is to let the children see by their daily example that the parents respect and defer to each other.—Farmer's Life.

"IS THE SHADE OF THE OLD APPLE TREE"

In the shade of the old apple tree, I've waited so long, love, for thee, that the voice I once heard, grows faint with each word, till it's barely a whisper to me. There is no more buzz left in the bee, the blossoms are withered, ah me!—and the tree that once grew where I waited for you, has changed to an old chestnut tree. In the shade of the old apple tree, where you hear the blamed buzz of the bee, with a big carving knife that I swiped from my wife, I am waiting and watching—by gee! Of daggers I have two or three and an ax and a cutlass, you see; and I'll stick all these things in the next guy who sings, "In the Shade of the Old Apple Tree."—Ex.

THE HOUSE CLEANING MICROBE.

This is the season of the year when the feminine members of the household are affected by a little microbe which now makes its semi-annual appearance. The disease is general and is usually worse in the spring than fall. This innocent little animal plays much havoc in all of our homes, it turns everything upside down and inside out. It causes the mighty lords of creation to groan in agony and long for the land where dust doth not corrupt or moths creep in and eat. The familiar name for this disturber of our domestic peace is the House-cleaner Microbe and since it is upon us it has seemed to me wise to suggest some ways and means for satisfying its insatiable appetite for cleanliness and change.

The house, for it is this material thing which gives lasting evidence of visitation of the Housecleaner, is of course thoroughly cleaned, windows, floors and every scrubbable thing within it scoured and scrubbed. This first demand of cleanliness being satisfied the second is that of decoration, the walls are tinted again or repapered. It is here that perhaps some practical advice may be given. Colors are often applied indiscriminately. If a few simple suggestions are kept in mind the results will be much more satisfactory. The window lighting and color of the wood work must largely govern the selection of color for the walls. A room which has north exposure should have a warm color on the walls for living or dining rooms, warm browns, terra cottas, yellow greens, or rich creams. If these rooms have east, south or west exposure, where there is much sun, cooler colors may be used, such as grays, cool greens and delft blue, the latter is a very attractive color for a dining room. The blue seems to give an added charm to all the china, especially is this true if any is displayed upon a plate rail.

For sleeping apartments these same suggestions regarding warm and cold colors hold true, but they should be in lighter tints, warm creams, yellows, greens and tans make very attractive colors for a bedroom. Light blue and pink are difficult colors to use for both are very cold in themselves but if placed on walls of south rooms the color of the sun largely counteracts the coldness of the color and they are attractive. Especially is this true if the woodwork is painted in white or cream. To have these attractive colors on the wall does not require much money or skill. Write to some large paint firm and ask for a color and for wall tints, they will also send you prices and if you ask they tell you the amount required for your rooms and furnish directions for using, then all you need besides the color is hot water and a brush, the latter costing about seventy-five cents or a dollar. These tints are powdered and are ready for use when hot water is added to them. They are put on as any calcimine and dry within an hour after being applied.

If the woodwork in the room is natural in color or stained darker, most any color will harmonize with it, but if painted great care should be taken to select a color which will be in perfect harmony. It is usually safer to select a tint or shade of the same color.—Mary Tanner Croswell.

An invitation is extended to our readers to contribute their experiences to this department. Inquiries answered.

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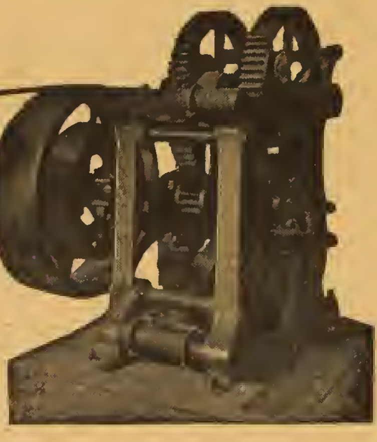
The Pomona Pump



☐ The New Pomona Pump is now being manufactured with machine cut gears and machine cut steel or bronze pinions. The pump fitted with this kind of gearing runs as smooth as a clock and there is absolutely no noise or vibration. The company have recently taken contracts for installing their largest sized pump with this class of gearing for the Artesian Belt Water Company of San Dimas, Western Water & Power Company of Glendora and other large irrigation companies. They are required to furnish these pumps with cylinders up to 12 inches in diameter and 72 stroke which has capacity of over 60 Miner's inches of water. The valves are made entirely of phosph'r bronze with ground metal taper seats so there is very little obstructiin to the water in passing through them and it is impossible to clog them with sand. These, in connection with machine cut gears, in the pump head, make a strictly high grade pumping outfit and the best by a long ways of anything on the market today.

This head and valves are both protected by United States patent. Beware of infringing as both manfacturer and user are liable.

The company has recently installed one of their latest improved heads for the Santa Anita Land Company, a subdivison of the Baldwin Ranch. Below is what the owners have to say about it:

"The new 38 pump you installed for us on our tract on the E. J. (Lucky) Baldwin Ranch is giving us satisfaction in every way. We think we have the very best that money will buy. Both as regards to pump, material used and installation. We made an excellent change when we removed the pump we had been using and installed your make."

We have pleased these people and there is no reason why we cannot please you.

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The Pomona Manufacturing Co.
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When writing advertisers mention Cultivator.

The Produce Markets

Los Angeles Markets.

Los Angeles, Cal., May 23, 1906.

Butter.

The Produce Exchange has again lowered the price of butter—that is, of fancy coast—a drop of 5c during the past week.

Local Creamery, per roll	.45
Valley Creamery, fancy	.42-45
Coast, Fancy	.40@42½
Coast, Choice	.37½@40
Fancy Eastern Cubes	.24
Cooking	.18

Cheese.

Cal. 3-℔. hand	.18
Cal. Young America	.17
California Anchor, Large	.16
Northern	.13-14
Domestic Swiss	.20
Imported do	.28

Eggs and Poultry.

Eggs, fresh ranch	.18
Northern Candled	.15

There is more difference between prices to producers of poultry and to the retailers of poultry than in most other lines. The following are average prices which dealers pay to producers for live weight:

Hens, per ℔	.13
Young roosters, per ℔	.17
Fryers	.17
Broilers, per ℔	.17
Old Roosters	.8
Turkeys	.19
Geese	.12
Ducks	.12

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock:

Hogs, 200 ℔s	.6½
Prime Steers	.4½
Cows	.4
Calves, per ℔	.4½-5
Sheep, ewes, per head	.4.25
Lambs, per head	.3.25
Wethers	.4.75

Potatoes.

Burbanks, fancy	.1.60@1.75
Salinas, choice	.1.75@2.00
Oregon	$1.35-$1.50
New, per sack	$2.50-2.75

Sweet Potatoes.

White	$3.00

Vegetables.

Onions, fancy Nevadas	.2.50@3.00
New Onions	.2.50@3.50
Bermuda	.2.50
Garlic	.8@10
Wax Beans	.5@6
Rhubarb, per box	.75@1.00
Parsnips, per doz	.35
Cauliflower, per doz	.85
Asparagus	.7@9
Lettuce, per dozen	.10@15
Bell Peppers	.15@18
Chili Peppers, Green	.15
Chili, dried	.20
Cucumbers, per doz	.60-$1.00
Radishes, per doz	.15
String Beans	.4@6
Beets	.40
Green Onions, doz. bunches	.25@35
Carrots, doz. bunches	.25@35
Peas, per lb	.2@3
Turnips, doz bunches	.25@30
Celery, per doz	.45@60

Citrus Fruits

Lemons, Standard	.1.25@1.50
Lemons, Choice	.2.00
Lemons, Fancy	.2.25@2.50
Navels, Choice	.2.00@2.25
Navels, Fancy	.2.50
Grapefruit	.2.50@3.50
Grape Fruit, seeds	.1.50@1.75

Fresh Fruits.

Apples are very scarce and of indifferent quality. A few Missouri Pippins from Colorado are offered.

Missouri Pippins	.3.25@3.50
Apricots, per crate	.1.50@2.00
Strawberries	.5@6
Dewberries	.6-7
Bananas, per ℔	.5@5½
Cherries, B. Repub	.7@10
Cherries, B. Tar	.8@12
Cherries, White	.7
Logan Berries	.9
Raspberries	.10

Dried Fruits

Evaporated Apples, ch to fy	.10
Apricots	.5@10
Peaches	.10½
Pears	.11½
Santa Clara Prunes	.4@8½
Smyrna Figs	.15@17

Beans, Dried.

Limas, No. 1	.5.00
Pinks, fancy	.2.40@2.60
Lady Washington	.3.10@3.25
Small White	.3.60@3.75
Black Eyes	.6.50

Honey.

Honey, extracted, water white, 60-℔ cans	.6
Honey, extracted, water white	.5½
Light amber	.5
Comb, water white, 1-℔ frames	.13
Light amber	.12@12½
Beeswax	.25

Nuts.

Peanuts, Virginia	.6½
Peanuts, California	.5
Walnuts	.13½

Hay.

Barley, No. 1	.14.00@15.00
Barley, No. 2	.10.00@12.00
Alfalfa, local	.12.00@13.00
Whole Hay, No. 2	.10.50@12.50
Plain Oat Hay, No. 2	.10.00@12.00

Grain.

Purchasing prices f. o. b., Los Angeles, are:

Wheat	.1.25@1.37½
Barley	.1.20@1.22½
Corn	.1.22 @1.24
Rolled Barley	.1.40
Bran	.1.20
Feed Corn Meal	.1.45
Shorts	.1.45
Wheat, per cwt	.1.50@1.65
Cracked Corn	.1.45
Oil Cake Meal	.2.50
Cocoanut Meal	.1.50

San Francisco Markets.

San Francisco, May 22, 1906.

The ruling prices of the San Francisco Wholesale Dairy Produce Exchange yesterday were as follows::

Butter.

Fresh California extras, 18c, steady; firsts, 17-17½c; seconds, 16c; packing stock, 15-15½c.

Cheese.

Fresh California selected, 17c; firsts, 16-16½c; seconds, 15-15½c.

Eggs.

New California fancy, 10c; firsts, 9½c; Young America, fancy, 11c; Eastern, fancy, 16½-17c.

Poultry.

Old roosters, per doz., $3-$3.50; young roosters, $5-$7.50; fryers, $4-$5; broilers, $2-$3; hens, small, $4.50-$5; large, $5-$7; live turkeys, per lb, nominal; dressed turkeys, nominal; ducks, old, nominal; young, nominal; geese, per pair, nominal; goslings, nominal; pigeons, per doz., $1; young, $1.50.

Fresh Fruits.

Greenwich-street wharf—

The leading fruits now in market sold yesterday at the following prices: Strawberries, per chest, $5-$7 for large varieties and $8-$10 for Longworths; apples, $1.50-$2.25 per box; cherries, black varieties 50-80c per drawer; white, 40-65c per drawer; cherries in bulk, black, 5-8c per ℔; white, 4-6c; gooseberries, 25-35c per drawer; oranges, navels, $2.25-$3 per box, with a few second grade at $2 per box; lemons, $1.50-$2.25 per box; Mexican limes, $3.50-$5 per box; bananas, $1-$2 per bunch; pineapples, $2-$3 per dozen; premis berries, $3-$4 per chest; currants, 75c per drawer.

Vegetables.

Dealers sold vegetables yesterday at the following prices: Asparagus, $1.50-$2.50 for small and $3-$4 for large box; green peas, 70c-$1 per sack; rhubarb, 75-$1 per box for small and 85-$1.25 for large; string beans, 4-7c per ℔; tomatoes, 75-$1.25 per box; potatoes, new, 1-1¼c per ℔; old, Rivers, 80-$1.10 per sack; Oregon, $1-$1.25; Coos Bay, $1.20-$1.35 per sack; onions, new, 85-$1.15 per sack; boxes, 25-50c; Oregons, $2.75-$3.75 per cental as to quality; Australians, $3.50-$4.50; cucumbers, 50-75c per dozen.

Flour and Cereals.

FLOUR—Net cash: Family Extra, $4.70-$5 per barrel; bakers' extra, $4.40-$4.75 per barrel.

WHEAT—No. 1 shipping, per cental, $1.27½-$1.30; inferior grades, $1.18-$1.25; white milling, good to choice, $1.32-$1.35, with fancy up to $1.40.

BARLEY—No. 1 feed, $1.20-$1.22½; with fancy up to $1.25; common to fair, $1.15-$1.18¾; brewing nominal.

OATS—White, $1.50-$1.70; red, $1.52½-$1.60; black, $1.30-$1.40.

RYE—$1.47½-$1.55 per cental.

Hay and Feed Stuffs

HAY—per ton, choice wheat, $13 to $17.50; wheat and oat, $11-$15.50; oat, $10-$14.50; barley, $8.50-$12; alfalfa, $11-$12.50; stock, $7-$7.50.

STRAW—Per bale, 35-60c.

BRAN—Per ton, $17.50-$22.

MIDDLINGS—Per ton, $25-$30.

GROUND BARLEY—Per ton $25-$27.50.

Beans and Seeds.

BEANS—Price per cental: Large white, $2.50-$2.65; small do., $3.40-$3.50; pea, nominal; lima, $4.60-$4.75; red, 3.75-$4; pink, $1.90-2.05; bayo, $3.65-$3.85; blackeyes, $4.75-$5; red kidneys, $3.50-$3.75; horse beans, nominal.

SEEDS—There are scarcely any supplies on hand, and prices are nominal.

L A. EXCHANGE NEWS.

The annual election of directors of the Los Angeles Produce Exchange held on Wednesday, May 23rd, resulted in the election of the following gentlemen: John T. H. Lewis, Louis M. Cole, L. J. Mathews, J. C. Richardson, John T. Allen, A. M. Klein, Lawrence Shorten .

A cow which had a good mother, and grandmother, is many times better than the poor one with a long pedigree. A pedigree attached to a poor cow is very poor property.

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CITRUS MARKETS

New York, May 22.—The citrus market still rules strong with a slight advance on most grades over the prices of last week. Yesterday 36 cars were sold in a very strong market.

Today's sales of citrus fruits consisted of 27 cars. The market is strong. The weather continues favorable.

WASHINGTON NAVELS. ..

Averages.

Greyhound, ch, San Antonio Ex., $2.35; Stork, xc, San Antonio Ex., $2.75; Volunteer, xc, San Antonio Ex., $3; Foothill, or, San Antonio Ex., $3.05; Jewel, ch, San Antonio Ex., $3.15; Diamond, xc, San Antonio Ex., $3.25; Foothill, or, San Antonio Ex., $3.25; Green Crown, st, A. C. G. Ex., $2.45; Red Shield, xc, A. C. G Ex., $2.70; Fiesta, xc, Riverside Ex., $2.80; Our Pride, xf, Riverside Ex., ½s, $1.35; Red Globe, xc, Riverside Ex., $2.70; Riverside, st, Riverside Ex., $3.05; Uncle Sam, xf, Riverside Ex., $3.10; Red Globe, xc, Riverside Ex., $3.45; Eagle, xc, Riverside Ex., $3.30; Blue Globe, xf., Riverside Ex., $3.90; Our Pride, xf., Riverside Ex., $3.40; Quail, xc, O-C. Ex., $2.95; Quail, xc, O-C. Ex., $3.30; Puritan, fy, S. B. Co. Fr. Ex., $3.05; Puritan, fy, S B Co. Fr. Ex., $3.45; Cabrillo, $3.20; Rialto, fy, CCU Rialto, $3.45; Gondolier, xc, CCU Rialto, $3.10; Snowball, st, CCU Rialto, $2.95; Liberty Bell, xc, CCU Pasadena, $2.70; Partridge, xc, CCU Claremont, $3.35; Lilac, ch, CCU Lordsburg, $2.70; Lighthouse, st, CCU Lordsburg, $2.15; Standard, st, Nat. Or. Co., $3.20; Orchard, or, Nat. Or. Co., $3.90; Golden Eagle, st, C. C. Chapman, $3.20; Old Mission, ch, C. C. Chapman, $3.25; Old Mission, fy, C. C. Chapman, $3.80; Mill Creek, xc, Crafton O. G. As., $3.25; Flower, xc, Upland District, $3.30; Flower, xc, Upland District, $3.50; Flower, xc, Upland District. $3.60; Flower, fy, Upland District, $3.80; Ruth, xf, Rubidoux Ft. Co., $3.50.

THOMPSON IMP. NAVELS.

Signet, xf, Or. G. Cash Assn, $3.75.

LEMONS.

Partridge, xc, CCU Claremont, $3.40; Flower, fy, Upland District, $3.50.

BLOODS (whole boxes.)

Stork, xc, San Antonio Ex., $3.50; La Mesa, xf, Riverside Ex., $3.50; Mission Bells, xc, A. B. Chapman, $3.50; Gondolier, xc, CCU Rialto, $3.45; Liberty Bell, xc, CCU Rialto, $3.75.

BLOODS (half boxes.)

Gondolier, xc, CCU Rialto, $1.55; Liberty Bell, xc, CCU Rialto, $1.60.

SEEDLINGS.

Stork, xc, San Antonio Ex., $3.05; Violet, ch, Duarte-Mon. Ex., $3.45; Iris, xf, Duarte Mon. Ex., $3.75; Mission Bells, xc, A. B. Chapman. $3.35; Rialto, fy, CCU Rialto, $3.35; Gondolier, xc, CCU Rialto, $2.95.

MEDITERRANEAN SWEETS.

Mill Creek, xc, Crafton O. G. As., $3.25; Crafton, fy, Crafton O. G. As., $3.40; Liberty Bell, xc, CCU Pasadena,, $2.95.

GRAPEFRUIT.

Rialto, fy, CCU Rialto, $1.90.

GRAPEFRUIT (half boxes.)

Colonel, xc Or. G. Cash Assn., $3.10; Signet, xf, Or. G. Cash Assn., $3.75.

ST. MICHAELS.

La Mesa, xf, Riverside Ex, $3.10; Golden Rule, xc, Riverside Ex., $3.10; Old Mission, fy, C. C. Chapman, $4; Liberty Bell, xc, CCU Pasadena, $2.95.

TANGERINES.

Golden Rule, xc, Riverside Ex, $1.70; Stork, xc, San Antonio Ex., $2.15.

Foreign Lemon Sales.

Twenty thousand boxes of Sicily lemons were sold at auction today. The market is slightly higher. The next sale will be held on Wednesday, when 20,000 more boxes will be offered. Fancy 300s brought $3.75 to $4; choice 300s brought $3.40 to $3.60; fancy 360s brought $3.90 to $4.15; choice 360s brought $3.40 to $3.70.

Boston, May 21.—Twelve cars of navels, one car of bloods and one car of lemons were sold at auction today. The market is very strong. The weather is fine.

NAVELS.

Pet, xc, San Antonio Ex., $2.85; Stork, xc, San Antonio Ex., $2.90; Greyhound, ch, San Antonio Ex, $3.25; Justrite, ch, Queen Colony Ex., $3.05; Jameson, fy, Queen Colony Ex., $3.45; Blue Print, fy, Riverside Ex., $3.25; Square, or, Riverside Ex., $3.50; Squirrel, fy, A. H. Fruit Co., $3.45; Rialto, fy, CCU Rialto, $3.40; Gondolier, xc, CCU Rialto, $2.95; Lilac, ch, CCU Pomona, $3.25; Thistle, or, CCU Pomona, $3.25; McBean, ch, $3; McBean, fy, $3.05; Mission Bells, xc, A. B. Chapman, $3.25; Clover, xc, Redlands O. G. Assn., $3.25; Rose, xf, Redlands O. G. Assn., $3.70.

GRAPEFRUIT.

Golden Rule, xc, Riverside Ex, $1.85; Leader, xc, Queen Colony Ex., $2.05; Southland Beauties, fy, Q. C. Ex., $3.15.

TANGERINES.

Pet, xc, San Antonio Ex., $1.30.

BLOODS (whole boxes.)

Leader, xc, Q. C. Ex., $3; Southland Beauties, fy, Q. C. Ex., $3.60.

BLOODS (half boxes.)

Southland Beauties, fy, Q C. Ex., $1.55; Montclare, fy, CCU Upland, $1.45.

SEEDLINGS.

Gondolier, xc, CCU Rialto, $3.30; Stork, xc, San Antonio Ex., $2.80; Mission Bells, xc, A. B. Chapman, $3.15.

LEMONS.

Chapman, xc, A. B. Chapman, $3.10.

SOILS.

Syllabus of a lecture on modern scientific horticulture before staff of public library, May 2d, 1906. by C. J. K. Jones, A. M., Director of Study and Research.

SOIL—

I.—What is it?—(1) Derivation. (2) Nature of Rocks: (a) chemistry, (b) physical structure; i. e. in fineness; e. g. gravels, silt, etc.

II.—Functions of Soil—(1) Support of Plants. (2) Location of Food Supply. (3) Source of Water Supply. (4) Laboratory: (a) chemical, (b) biological.

III.—Treatment of Soils—(1) Cultivation: (a) tools, (b) season (c) crops. (2) Fertilization: (a) crops, (b) Fertilizers: 1. potash, 2.phosphoric acid, 3. nitrogen, 4. calcium. (c) Application: 1. surface, 2. sub-surface.

IV.—Irrigation—(a) Functions of Water: (1) soil solutions, (2) sap, (3) transpiration. (b) Root application. (c) Spraying. (d) Rotation to crops.

V.—Light and Shade—(a) Effect on General Health of Plant. (b) Effect on Fungi. (c) Effect on Insects. (d) Effect on Colors. (e) Effect on Fruit.

VI.—Heat and Cold—(a) Relation to Plant Geography. (b) Relation to Variety of Crops. (c) Relation to Production of Crops.

VII.—A Fertile Soil.

The Beck-Wakefield Co., agents for the justly celebrated Foos Gas Engine, were burned out in the San Francisco fire but have a large stock of engines at their warehouse and also a full line of their goods at their Los Angeles house. Prompt shipments can be made at any time. Write them for catalogue. Their advertisement in this paper refers only to the Foos Engine which for simplicity, reliability and economy is unexcelled by anything on the market.

Harry Robson, Commission Merchant
and Dealer in All Kinds of Small Fruits and Vegetables. Agency for Los Angeles Berry Baskets. Consignments Solicited.
Harry Robson,* L. A Market, *Los Angeles, Cal.

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J. D. Robinson Co., Fruits and Produce
Consignments Solicited
Sole Agent for Little Gem Berry Baskets
Stalls 149-150-204-205 Los Angeles Market, Los Angeles, Cal.

ORPHANS RECEIVED

South Pasadena, April 23, 1906.

The following named children have been admitted to the Boys and Girls' Aid Society of South Pasadena since last report:

Orphans—Charles Davis, Amer., 12 years of age, blue eyes and brown hair.

Half orphans—Albert Kujaneck, Ger., 13 years old, grey eyes, dark brown hair. Leroy Hunter, Amer., 7 years old, brown eyes, dark brown hair. Ida Marks, Port., 10 years old, brown eyes and brown hair. Marie Marks, Port., 8 years old, brown eyes and brown hair. Bently Stinhoff, Amer., 10 years old, blue eyes, light brown hair. Walter Higgins, Amer., 12 years old, blue eyes, light brown hair. Maud Hogan, Amer., 13 years old, blue eyes, brown hair. Geo. Mazet, Mex., 10 years old, black eyes, brown hair. Leonard Kujaneck, Ger., 12 years old, grey eyes, brown hair. Walter O'Brien, 7 years old, Amer., blue eyes, brown hair. Arthur O'Brien, 9 years old, Amer., blue eyes, brown hair. Joseph Gardner, Amer., 13 years old, blue eyes, black hair. Harry Gardner, Amer., 13 years old blue eyes, black hair Joseph Marks, Port., 5 years old, grey eyes, brown hair. Guy Frits, Amer., 8 years old,brown eyes, brown hair. Velma Frits, Amer., 6 years old, blue eyes, brown hair. Eva Dutra, Amer., 9 years old, brown eyes, black hair. Orris Mills, Amer., 7 years old, brown eyes, brown hair. Lucile Mills, Amer., 6 years old, blue eyes, golden hair. Frank Escamille, Mex., 6 years old, black eyes, black hair. Hazel Evans, Amer., 11 years old, blue eyes, brown hair. Leo. Rowan, Amer., 9 years old, black eyes, brown hair. Martin Fricdell, Amer., 5 years old, blue eyes, brown hair. Sarah Carrillo, Mex., 12 years old, black eyes, black hair. Felisino Carrillo, Mex., 10 years old, black eyes, black hair. Marino Carrillo, Mex., 8 years old, black eyes, black hair. Tom Carrillo, Mex., 5 years old, black eyes, black hair. Ward Clarke, Amer., 8 years old, blue eyes, brown hair. Hartley Porter, Amer., 12 years old, blue eyes, brown hair.

CERTIFICATE OF PARTNERSHIP.

State of California, County of Los Angeles, ss.

We, the undersigned, J. J. Steadman, H. A. Perkins and Frank Honeywell, do hereby certify that we are the persons transacting business in the State of California, at the City of Los Angeles, County of Los Angeles, under the firm name and style of the Cultivator Publishing Company; that the names in full of all the members of such copartnership are J. J. Steadman, H. A. Perkins and Frank Honeywell, and that the places of our respective residences are set opposite our respective names hereto subscribed.

Names.	Residences.
J. J. STEADMAN,	Hollywood, California.
H. A. PERKINS,	South Pasadena, California.
FRANK HONEYWELL,	1702 Hoover street, Los Angeles, California.

State of California, County of Los Angeles, ss:

On this 12th day of May, 1906, before me, H. E. Storrs, a notary public within and for said county and State, residing therein, duly commissioned and sworn, appeared J. J. Steadman and Frank Honeywell, known to me to be the persons described in and whose names are subscribed to the foregoing instrument, and each of them acknowledged to me that he executed the same.

In witness whereof I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

(Seal) H. E. STORRS,
Notary Public in and for said County of Los Angeles, State of California.

State of California, County of Los Angeles, ss:

On this 14th day of May, in the year of our Lord one thousand nine hundred and six, before me, H. E. Storrs, a Notary Public in and for said County of Los Angeles, State of California, residing therein, duly commissioned and sworn, personally appeared H. A. Perkins, known to me to be the person whose name is subscribed to the within and annexed instrument, and acknowledged to me that he executed the same.

In witness whereof I have hereunto set my hand and affixed my official seal in said county, the day and year in this certificate first above written.

(Seal) H. E. STORRS,
Notary Public in and for Los Angeles County, State of California.

NATIONAL WOOD PIPE CO.
MADE FROM CALIFORNIA REDWOOD OR SELECTED PUGET SOUND YELLOW FIR
WOOD PIPE
WOODWARD PATENT MACHINE BANDED PIPE
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Cheapest because best.
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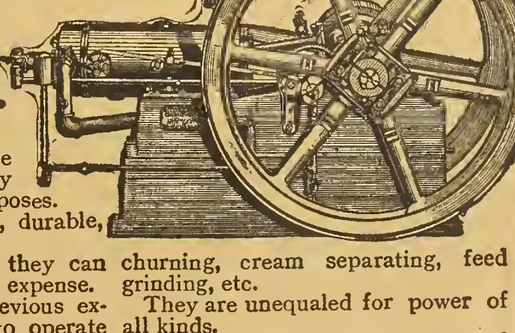
Gasoline Engines For Irrigating.



THE I. H. C. Gasoline Engines are especially adapted for irrigating purposes.

They will be found safe, durable, simple, and economical.

With maximum power, they can be operated at a minimum expense.

Expert knowledge or previous experience not required to operate them.

They can be attached to any kind of pump in any position, for raising water from deep or shallow wells, reservoirs, canals or running streams.

They excel in **full, regular and long sustained power.**

They can also be used for a general purpose engine for sawing wood, churning, cream separating, feed grinding, etc.

They are unequaled for power of all kinds.

Made in variety of sizes and styles:

Vertical—2, 3, 5 Horse Power.

Horizontal—(Portable and Stationary), **4, 6, 8, 10, 12 or 15 Horse Power.**

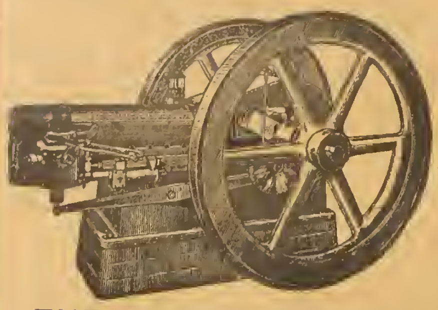
An engine of this description, with a suitable pump, makes agriculture a success where it would otherwise be impossible.

Call on local agent and examine these engines or write nearest general agency for illustrated catalog.

WESTERN GENERAL AGENCIES: Denver, Col., Helena, Mont., Portland, Ore., Spokane, Wash., Salt Lake City, Utah, San Francisco, Cal.

INTERNATIONAL HARVESTER COMPANY OF AMERICA, CHICAGO, ILL.
(INCORPORATED.)

THE WESTERN GAS ENGINE



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Maximum Power at Minimum Cost

"From Factory Direct to User"

Designed and built by Western experts for Western use with Western fuel. In construction the Western embodies many original, yet practical ideas, which place it in advance of any other make on the market today. The simplest, strongest and best engine for

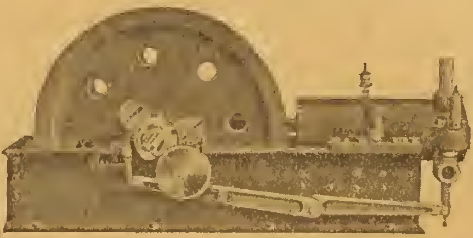
Irrigation, Power and Electric Plants.
Any Size from 5 to 500 H. P.

Burns cheapest fuel—gasoline, distillate or crude oil—with a saving of 20 to 40 per cent over any other style. **Send for Illustrated Catalogue** fully describing every detail of construction; tells **how** and **why** the Western excels all others; it gives the facts—the proof. Learn what Western engines are doing for others. Send your name today—ask for latest issue, A6.

WESTERN GAS ENGINE CO.
908-932 N. MAIN ST. LOS ANGELES, CAL.

Success Pumping Portable Traction Engines

Gasoline and Distillate



Quality the Best Prices the Most Reasonable

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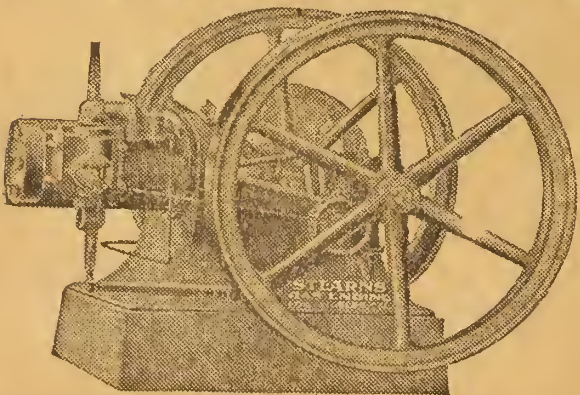
International Gas Generator and Power Company
717 N. Main St. - Los Angeles, Cal.
Mention Cultivator

STEARNS GASOLINE OR DISTILLATE ENGINE



Has many points superior to any other engine.

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Every One Satisfactory

Built for California cheap fuel.

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STEARNS GAS ENGINE WORKS 1001-3-5 NORTH MAIN STREET
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NO, THIS IS NOT AN ARTESIAN WELL, BUT

AN IRRIGATION PUMPING SYSTEM
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POWER PLANTS, PUMPING MACHINERY AND WATER SUPPLY GOODS 212-214 S. Los Angeles St., Los Angeles, Cal.

The Haynes Gasoline Engine

Simplicity is its feature. You do not need to be an experienced engineer to operate the Haynes. My prices are the lowest for a first-class engine. Guaranteed.

I install Irrigation Plants complete. Send for Catalogue and Estimates.

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246 N. Hunter St. - Stockton, Cal.

For Irrigation For Drainage For Power

GIANT Distillate, Gas, Oil and Gasoline ENGINES

Are the most economical in first cost, fuel consumption and repair bills. Complete equipments for irrigation or drainage. Write us your wants in this line and let us give you an estimate, or call at our works and see the engines in operation.

TARBOX & McCUTCHAN, Manufacturers, COR. MAIN and EAST STS., STOCKTON, CAL.

The Beck-Wakefield Co.

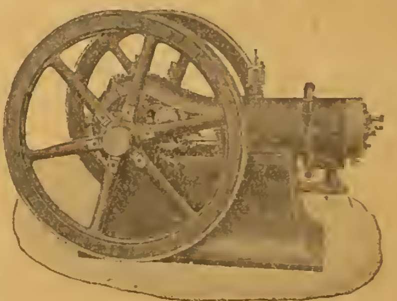
Agents For The

Foos Gas Engines

The Foos Gas Engines have many leading features which go to make it the best type of Gas Engine. Simplicity, Reliability and Economy, together with fine bearings and workmanship, make it a life-long engine. Our Market Street store and office was destroyed by the fire, but we have a large stock of Engines at our warehouse, also a large stock at our Los Angeles warehouse, and can make prompt shipments. Send for catalogue.

Temporary Office, 2323 Fillmore St., San Francisco
205-207 No. Los Angeles St., Los Angeles

THE CALLAHAN DISTILLATE ENGINES

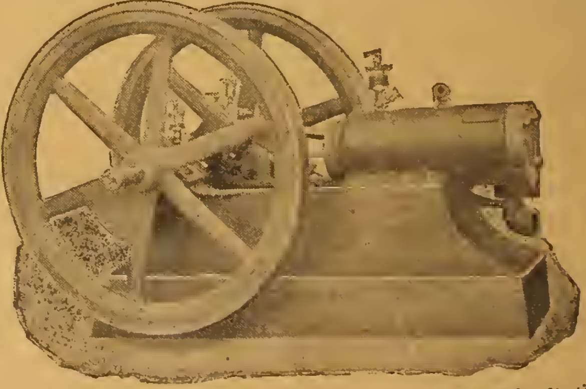


A First Class Engine at a Moderate price. Four Carloads have arrived since the fire.

Three Carloads of **Centrifugal Pumps** in Stock.

G. W. PRICE PUMP CO.
Temporary Office
101 Eighth St., Oakland, Cal.
Telephone Oakland 4376

Samson Gasoline and Distillate Engines



Are Strong and Durable

Fully guaranteed in every particular.

We make complete Irrigation Outfits.

Samson Centrifugal Pumps

Are the best. The enlargement of our factory makes it possible for us to make prompt delivery.

Send for our new catalogue and estimates.

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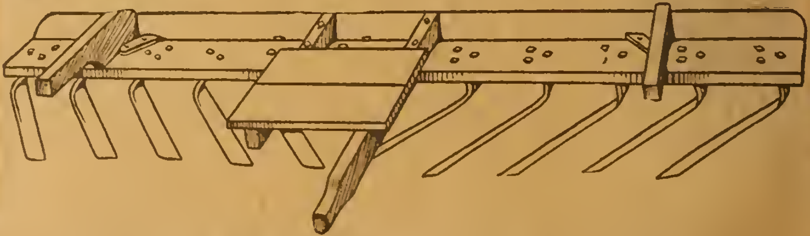
Office and Factory: 1100 to 1198 Aurora St., Stockton, Cal.
Branch: 941 J St., Fresno
Branch: 233 S. Los Angeles St., Los Angeles

THE

Killefer Clean Cut Weeder



Is just what the name implies. It is the most effective tool for keeping down the growth of weeds after rains or irrigating on orchard, beet, bean or grain land. It does twice the work of any other tool with the same power. The knives overlap so it is impossible to miss any weed. Built in 6, 8, 10 and 12 foot sizes. The patented knives are so formed that they wear uniformly from heel to point, causing them to wear twice as long as any other blade for the same purpose. It is ***the*** tool for weed killing on any kind of cultivated land. Blades can be attached to cut in or out as desired.

The Killefer-Griffith Mfg. Co., 1336 Palmetto Street, Los Angeles, Cal.

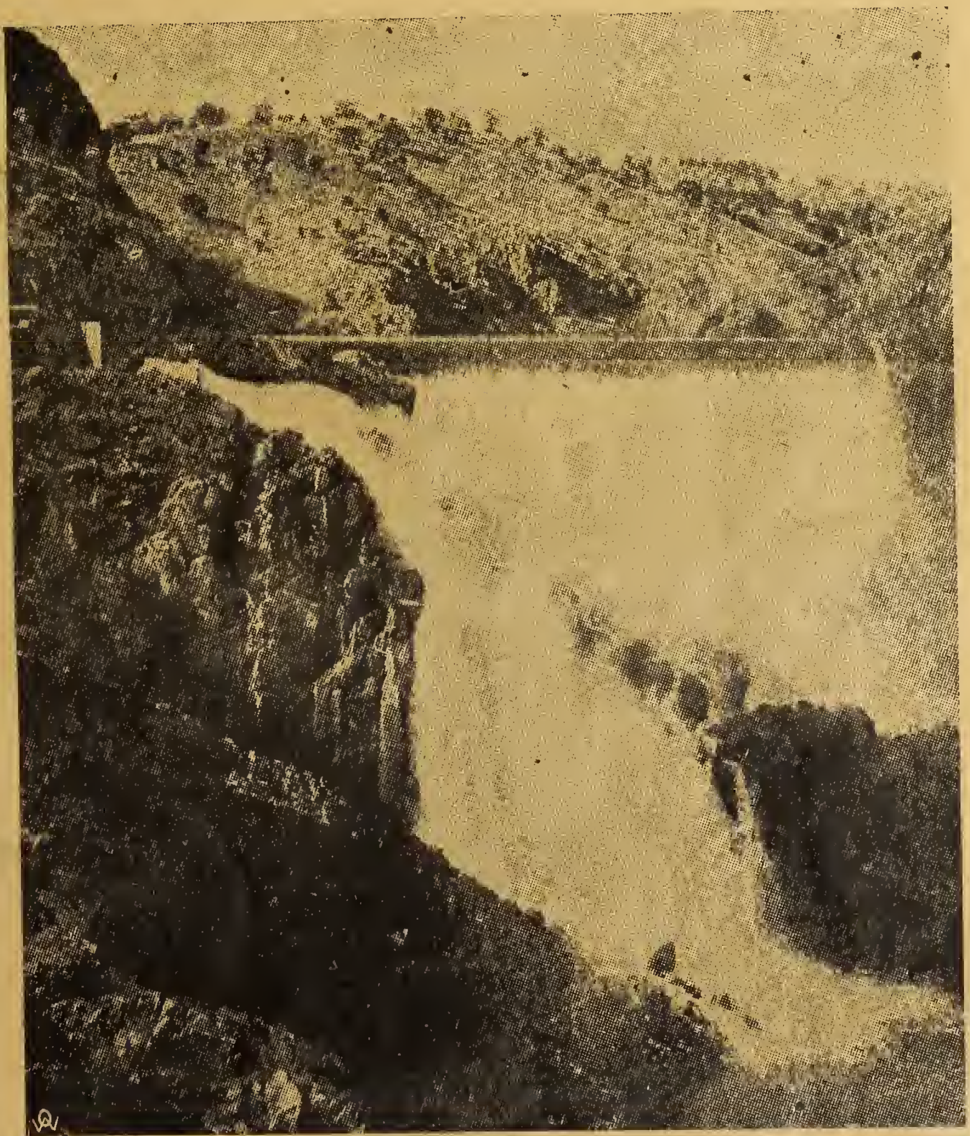
DEEP WELL PUMPS SHALLOW WELL AND POWER PUMPS OAK TANNED CUP LEATHERS.

A·T·AMES GALT, CALIF.

CALIFORNIA CULTIVATOR

DEVOTED TO AGRICULTURE IN ALL ITS BRANCHES

LOS ANGELES JUNE 1, 1906 SAN FRANCISCO



Courtesy A. B. Shoemake Co.

LA GRANGE DAM

Source of water supply for Modesto and Turlock Irrigation Districts. Dimensions: Width at top, 327 feet; heighth, 127 feet; breadth at bottom, 83 feet; at top, 11 feet; 39,552½ cubic yards; 29,111 barrels of cement. Cost $543,164.-16.

While it must be admitted that scientific irrigation is yet in its infancy and is still new to America, this section has the best, the cheapest and the most reliable system known to the men of this continent.

The people, and not great corporations, own the water and the expense of irrigation is confined to the simple charge of keeping up the ditches, with their headgates, drops and flumes, in repair, and distributing the water.

FERTILE LANDS FOR SETTLERS.

Large tracts of land will be opened for settlement in the Yuma Indian reservation, according to information which has been received. J. B. Lippincott, supervising engineer of the reclamation service of the United States geological survey department of the interior, writes as follows: "Work is well under way at Yuma on the dams and the levees, and we expect to start construction of the canals in a few weeks. The time for the completion of the contract on the dam is July, 1907. The other work under the project will be timed so as to be finished simultaneously with the work on the dam. In the meantime, there will be no opportunity for obtaining water under government canals under the Yuma project, but there is a great deal of work to do both for laborers and mechanics in connection with this construction. We are also employing all the animals we can get in the country.

"On the California side all the land to be irrigated i. . the Yuma Indian reservation, which we propose ultimately opening, but the date for which has not been set. On the Arizona side most of the lands are either patented or claimed by various settlers. A great many of these claims, however, are of very doubtful validity.

"A water users' association has been organized at Yuma, the purpose of which is to contract with the secretary of the interior and also to handle the irrigation affairs of the community. There will be about 100,000 acres organized at Yuma. This land will be suited to the growth of all the different varieties of crops that are growing in tropical regions. The water supply is ample, soil very fertile and the climatic conditions permit of continuous growth of vegetation."

THE EGG PRODUCING HEN.

There is much controversy going on at present over the identical build of the hen that produces the greatest number of eggs during the year. Each poultry man has his own idea of what this form should be so that it is safe to say the argument is less important than we have been led to believe. The Standard, the guide book of breeders, prescribed a certain typical form and it is safe to be guided by this, at least to the extent of the size and weight of a bird at a given age. Beyond this it is seriously questioned if there is much in the idea that the hens producing the greatest number of eggs in a year are of a specified formation. We have worked on the plan of selecting our stock as nearly to the requirements of the Standard as was possible with fowls not bred for the show room. Then if any were plainly under size or showed any delicacy of constitution they were discarded. We have tried to breed so that the relation was not too close and from stock that had an ancestry noted for egg laying. We believe there is more in the question of proper size, proper vitality and proper ancestry than there is in shape.—G. C. Z.

Set the hens in a separate room from the laying stock where they will not be disturbed and where they will not hear much of the noise of the layers and they will do better work in hatching.

The roosts should be low, especially for large, heavy fowls, and should all be of the same height.

EGGS, 7c DOZEN

What Does It Cost You a Dozen for Your Eggs?

Wouldn't you like to buy a few thousand dozen of nice large fresh laid eggs for 7c a dozen?

And if you learn how to make eggs at a cost of 7c a dozen, it will be equally as good for you, won't it?

You know what the market price is for eggs today, and you know they will be higher after awhile—perhaps 30c, 40c, or even 50c a dozen. Well, if you can get good eggs at a cost of 7c or 8c a dozen, you can see a good chance to make some money this year—can't you?

The Lord helps those who help themselves—therefore, you must act, and do something for yourself when you read this. We'll show you how to make the eggs at a cost of about 7c a dozen, if you want them. How many laying hens have you got? How many eggs do they lay a week? What do you feed them? How much a day does it cost to feed them? Did you ever figure how much a dozen it costs you to produce eggs? Did you know that some feeds costing $40.00 a ton or more, will produce eggs at a less cost per dozen than the other feeds costing $18.00 to $20.00 a ton?

Every poultryman knows about how much a dozen he can sell eggs for, but how many poultrymen figure how much a dozen it costs them to produce these?

When you buy feed don't figure how many pounds or how many sacks you are going to get for so many dollars, but MAKE MONEY BY USING YOUR BRAINS—BUY THE FEED THAT **PRODUCES THE MOST EGGS.** The feed that makes the hens lay the most eggs with the smallest number of pounds of feed—figure how much a dozen you can produce eggs for.

INTELLIGENT MEN buy COULSON'S IMPROVED MASH EGG FOOD for their hens—and the other kind of men who haven't any brains, don't know enough to buy it, consequently, they are not making as much money as they might be making. You find them a slave in the world—have been ten or maybe twenty years struggling on and still a poor man. They have nobody but themselves to blame—they know it all; don't want to learn; never will learn—scoff at new ideas—and remain a poor slave.

* * * ** * *

You can produce eggs by feeding COULSON'S IMPROVED MASH EGG FOOD at a cost of 7c or 8c per dozen. For illustration:

Suppose a man has 1000 hens—a 90-pound sack of the IMPROVED MASH EGG FOOD will make the morning meal, as it is not necessary to add anything else to it. A sack of wheat, say 125 pounds, will make the evening meal. The IMPROVED MASH EGG FOOD will cost, say $2.00 and the sack of wheat about $2.00, making the feed for the day cost about $4.00. Now 1000 hens, fed on IMPROVED MASH EGG FOOD, ought to lay at least 600 eggs a day; that would be 50 dozen, so we say the cost would be 8c a dozen; in some cases, where they get 700 eggs per day the cost would only be 7c per dozen.

At the present time, with eggs selling at 17c and 19c per dozen, and as eggs go higher, you can see your profits of so much per dozen and you can see how much better it is to feed the BEST FEED; therefore it is **FAR CHEAPER** to feed the IMPROVED MASH EGG FOOD to your hens, where it only costs you from 7c to 8c to produce a dozen eggs; whereas it will cost you 10c, or 12c per dozen feeding other feeds. This saving of 3c per dozen on the cost to produce eggs inside of a year would mean a whole lot to you.

Eggs at 7c Dozen Earn $12.00 a Day

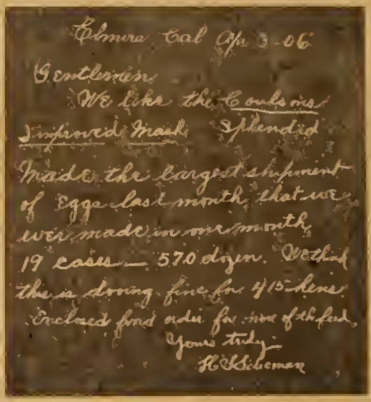
M. Sartori, near Tomales has nearly 2500 laying hens—he feeds them $2.25 worth of COULSON'S MASH EGG FOOD every morning, and about $5.00 worth of wheat in the evening. Total cost of feed, $7.25 per day.

These hens are now laying 105 dozen eggs per day, and sometimes more—by feeding them COULSON'S IMPROVED MASH EGG FOOD once a day, they produce eggs at 7c per dozen.

Mr. Sartori is now getting 19c per dozen, therefore he makes a profit of **OVER $12.00 a day** by feeding COULSON'S MASH EGG FOOD.

4 CENTS A MONTH to feed a hen Coulson's IMPROVED Mash Egg Food Every Day. Two eggs a month pays for the feed and when you get 18 to 20 eggs a month think of the money the hen earns for you.

Feed $40.10 —— —— Eggs $108.30



Elmira Cal Apr 3-06

Gentlemen

We like the Coulsons Improved Mash Splendid

Made the largest shipment of Eggs last month that we ever made in one month, 19 cases — 570 dozen. We think this is doing fine for 415 hens. Enclosed find order for more of the feed.

Yours truly

H. K. Schieman

325
Car Loads
of this feed, called COULSON'S EGG FOOD used in California during the year 1905

Don't you think it must be good? Used as a straight feed for the pullets and laying hens—for sale at Feed Stores.

For further particulars, write to

Coulson Poultry & Stock Food Co., Petaluma, Cal.
(The Greatest Chicken Village in the World)

Fed 10 sacks COULSON'S IMPROVED MASH EGG FOOD, Cost.	$19.50
3 sacks COULSON'S SCRATCHINGS, Cost.	6.45
Wheat and other Grain, Cost.	14.15
Cost of feed per month	$40.10

RESULT: 570 dozen eggs at 19c a dozen $108.30—450 hens feed on COULSON'S IMPROVED EGG FOOD.

Profit one month, $68.10. Cost of producting eggs, 7 1-3c a dozen. Cost is not much—2 pounds feeds a hen a month.

Ask your dealer for Coulson's Improved Mash Egg Food or write for circulars and samples. Send 10c postage for a beautiful book, "RAISING CHICKENS."

ASK YOUR DEALER OR WRITE TO

COULSON POULTRY & STOCK FOOD CO., PETALUMA, CALIFORNIA

CALIFORNIA CULTIVATOR

Vol. XXVI—No. 22 LOS ANGELES, CAL., FRIDAY, JUNE 1, 1906 Subscription $1.00 a Year

Apple Growing in Northern California

By George N. Whitaker, Santa Rosa

As far back in history as the Garden of Eden, the apple and its fruit has ever been a source of praise. So much, in fact, has been said and written upon this subject that to enlarge upon it seems impossible. The heathen of the north believed that the apple possessed the power of conferring immortality. We, in our civilized times, know this to be an untruth.

To America, where the apple tree grows to perfection over a wider range than any other fruit, is due the greatest progress in its development. In the Northern, Middle, and portions of the Pacific Coast States, the apple is more perfectly naturalized than in any other section of the civilized world. During colonial times, the trees were principally seedlings, the fruit being used mostly for cider, which, being one of the principal drinks of the people, abounded on every table. As early as 1780 we have accounts of apple trees bearing as much as eighty bushels, which in our measure would be about sixty-five boxes. History speaks of apple trees measuring 16 feet in circumference and producing 120 bushels per year. I can remember a seedling apple tree at my old home in Iowa that was a strong, vigorous tree at seventy years of age and bore sweet apples. We have an account of apple trees in Pennslyvania which were 20 feet in girth and 58 feet in height, having a spread of top of 76 feet.

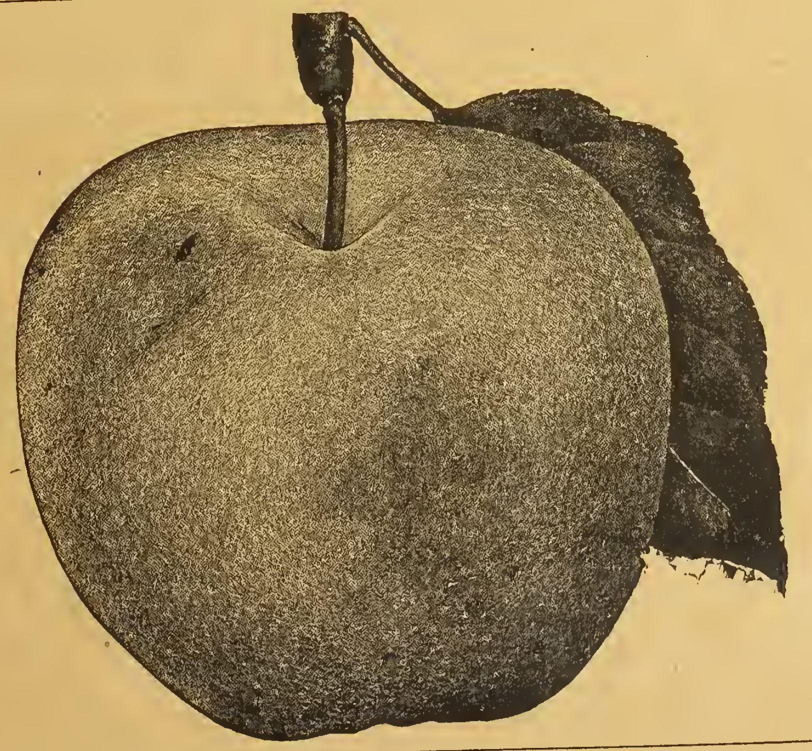
The export of apples from the United States in both the green and dried state is getting to be immense. The United Kingdom consumes over 5,000,000 barrels of green apples per year, over 75 per cent coming from America. In 1903, the United States exported to all countries over $5,000,000 worth of dried fruit. Every 14 pounds of dried apples represent 100 pounds of green fruit, so it can readily be seen what immense quantities in both green and dried state are exported.

Just what percentage of the export comes from California I can not say, but it is no small amount, I can assure you. I have seen in the London daily papers quotations of Baldwin apples which were shipped from California selling as high as $4.10 per barrel. I have also seen American Newton Pippins quoted at $5.30 per barrel.

At present Oregon and California are the principal exporters of green and dried apples on the Pacific Coast, and as soon as the Isthmian Canal is completed the Pacific Coast States will have an equal chance with the Atlantic States in the exportation of green and dried apples.

There are many sections in Northwest California, particularly Sonoma County, that produce as fine a quality of apples as any other part of the Union, and I venture the assertion that the farmers in Northern California having soil and location suitable to apple-growing will not make a mistake by planting good varieties of apples both for shipping and drying purposes. The climate and soil of Sonoma County are so varied that it would be hard for me to determine where a perfect apple could not be produced.

The qualities now in demand for an ideal apple may be summed up as follows: Bright color, good shape, uniform size, good shipping and drying qualities, and good keeping and good cooking qualities. With the present demand of the market a bright red apple sells the best. All things considered, the globular or round form is the best, as such apples pack closer and are less subject to bruises. Just how large the ideal apple should be, I can not readily determine. For general purposes, a medium-sized apple is the most desirable. Whether the size is expressed in weight or not, it is important that the size be uniform.



The richness of an apple consists principally in the proper proportions of acid and sugar. The average amount of sugar in our standard apple is about 8 per cent, and of acid is about 1-1300 per cent. Should an apple be deficient in either of these qualities we have an insipid apple; should acid prevail then we have a sour apple, and should sugar prevail, a sweet apple. For the average taste, the Bellefleur, Wagner, Rhode Island Greening, and Gravenstein have about the proper proportions of sugar and acid.

Flavor is a quality due to sugar and acid. Flavor and odor appear to be closely connected, and are said to be due to volatile oils and ether. Some varieties of apples possess a marked and agreeable flavor and add much to their value as a dessert fruit.

For drying purposes the skin of the apple should be thin, while at the same time it should be thick enough to stand ordinary handling and not break or bruise.

A crisp and tender-fleshed apple is always favored, although this tenderness should not be connected with sponginess. For all purposes the core should be small and well closed.

I do not know exactly what the cooking qualities of an apple should be, however, although I think it ought to contain an acid juiciness and an abundance of the substance which produces jelly when boiled. Sweet, juicy apples are, as a rule, the best bakers.

An ideal apple should have the quality of long keeping. This essential makes it the world-renowned fruit of the temperate climate of the United States. Apples vary in a wide degree in regard to their keeping qualities. It does not depend entirely on their firmness, but, as a rule, firm apples keep the best. The keeping qualities vary, however, according to soil, location, and climate. This marked difference will often be found in the same variety of apples.

The qualities noted above belong to the apple-separated from the tree. When united with the tree, there are two essentials that should not be overlooked. One is an eveness in ripening. For a good shipping apple, this is an important quality. The other essential is a firm adherence to the tree. It is a marked defect of some varieties to fall too early from the tree. These are the weaker points of some of our fall apples. Often some of our firmest adherents to the tree are so weakened by insects or fungoid growth that they fall before ripening. We often speak of such as wind-falls. But the true cause should entitle them to be termed worm-falls. When we have produced an apple that shall contain in the highest degree all the qualities which I have briefly noted we will not fall far from producing our ideal apple.

The apple, like all other productions of human skill and abor, is constantly advancing. Each step points to higher and better productions within our power of achievement. There are two scientific questions connected with the production of a perfect apple: First, the scion and stock should be as near as possible of the same growth and texture of wood, so as to be congenial to their growth; second, the soil and climate should be suitable to the healthy growth of the tree. The soil should contain certain minerals requisite to produce a well-formed and perfectly developed apple. An apple tree may grow and produce fairly good fruit, yet if it were on a stock more congenial to the scion it will produce better developed apples; the tree would be more vigorous, more profitable, would live to a greater age, and produce better keeping apples. I believe that this will be the next step in the advancement of the production of a more perfect apple than is grown at the present time. Apple trees become sickly owing to the scion and stock not being adapted to each other. Such trees are subject to all kinds of fungous growth and are liable to infect healthy trees and fruit.

To Sonoma County belongs the credit of growing the first apples in Northwest California. The Russians planted an apple orchard at Fort Ross about the year 1814. I visited that orchard in 1874. The trees were then over fiftv years old, and well loaded with apples which were rather under the average size. The trees were large and healthy. None of the present orchard pests had reached that lone orchard, but no doubt they are there now. Sonoma County in 1814 comprised all the territory west of the Sacramento River and north of San Francisco to the Oregon line. To Sonoma County, also, is due the credit of growing the first vines. At the time of founding the old Sonoma Mission the mission fathers planted the vine. But credit is due the early pioneers for the demonstration that the apple could be grown here in its most perfect state. In those days the ideal apple could be produced with but little labor. An apple tree in the pioneer days of Northern California, if on soil well adapted to its growth, was worth more than one acre of good wheat land. And at the present day apple-growing is the most profitable of all our horticultural industries. But it must be on soil best adapted to its growth. When the above rules are followed with proper care and attention the apple tree will respond with its delicious fruits as in the pioneer days of Northwest Caifornia.

Deciduous Fruit Culture

BY J. W. MILLS, POMONA, CAL.

APPLES.

The United States Department of Agriculture has made extensive experiments with stored apples, determining the changes that take place chemically. Examination was made by microscope also. Nine leading varieties were tested. The results showed that there was very little difference between the changes of the composition between those apples kept in cold storage and those kept in common storage except that the latter changed in composition more rapidly. This is in accordance with experiments carried on by Prof. G. H. Powell in his shipping tests, that is the cold storage apples ripened much more slowly than apples not stored.

It was also shown that the less mature the fruit is when gathered the more rapid the changes tending to maturity after picking. It was found that mealy apples may contain as much juice as those which are not mealy. The difference being due to the separation of the cells of the flesh of the apple during the last stage of ripening.

* * *

EFFECTS OF RINGING.

A French scientist has experimented on the effect of ringing certain kinds of fruit trees, a practice sometimes put into use to promote bearing, pear and quince trees being used. The trees were three and four years old and part were ringed early in February before vegetation started and another set of trees was ringed three months later. Every two months after that part of the roots and branches were analyzed. With the pears, it was found that the roots of trees ringed in February contained more reserve material than did the roots of trees not ringed, while the stems contained less. After April it was found that the roots of the ringed trees were much poorer in reserve material than those of the normal trees. It is thought that the experiment shows that toward the end of winter and the commencement of spring the reserve material goes from the roots to the stem. From May to October the current of elaborated material is from the stem to the roots.

* * *

PRESERVING SMALL FRUIT.

The Station Record gives an account of the co-operative growers of New Zealand preserving their small fruits with an addition of an improved method. The fruit is placed in casks which hold from about three tons, the whole mass being stirred with beaters and at the same time sulphur-dioxide is forced in at the bottom and the gas is disseminated through the whole mass. The fruit thus treated is chiefly black currants and raspberries. It gives the fruit a bleached appearance but when it is boiled, the sulphur evolves "and the fruit reverts to a bright natural appearance." In making this jam, the fruit is boiled about twenty minutes before the sugar is added so as to drive off the sulphur.

Sulphur dioxide is made by adding strong sulphuric acid to copper and the result is copper sulphate (bluestone) sulphur dioxide and water. Sulphur dioxide has a strong affinity for water and is rapidly absorbed by it. This substance is harmless as it is composed of two parts oxygen and one part sulphur. It is a heavy gas and rapidly collects in the bottom of a vessel. The heat generated by the cooking drives the sulphur off and leaves the product pure but with a bright fresh color. The effect seems to be to prevent the oxidation of the fruit, which is the process that darkens preserved fruit.

* * *

PEAR BLIGHT.

Deane B. Swingle of the Department of Agriculture has spent the last month in traveling over the Sacramento Valley inspecting orchards and advising orchardists, and made the following statement regarding the present pear blight situation:

"In general it is too early to predict results for the entire season, but in comparison with the conditions of this time last year the amount of blight in the principal pear districts, as shown by blossom infections, has been greatly reduced where the last winter's campaign was thoroughly carried out. In orchards where the work was not well done the outbreak is, as we expected, very severe. It has not been our purpose to keep on the summer campaign, but as the growers are determined to remove those cases which have appeared, and as they are in some cases failing in some important details, it is necessary to warn them against expecting good results where these precautions are not strictly observed. Inexperienced men can never succeed in doing the summer work, and unless skilled labor of the highest class is obtainable the cutting should not be done, as it will do more harm than good. Three mistakes are being made by many who are undertaking summer cutting.

"**First**, cutting too closely to the blight. In the summer when the sap is flowing and the trees are active the germs are always working some distance below where they are visible to the eye, but some will not believe this until they have learned it to their sorrow. Every cut should be made from one to three feet below any visible portion of the blight. If this involves the removal of a large branch because of a blighted spur this should be done by all means, as the branch is surely doomed. It is folly to risk the life of a tree to save a few pears that will be lost in the end.

"**Second**, failure to disinfect. It is even more important to use the disinfectants in summer than in winter. Neglect in this respect will surely result in failure. Corrosive sublimate, four small tablets to a pint of water. It should be used on the shears after every cut and on all large wounds.

"**Third**, leaving cuttings in the orchard. These cuttings should be burned the same day that they are cut out.

"These details are absolutely essential, and to neglect any one of them is to fail. Those who do not observe them strictly are not following the Waite method of eradication.

"Skillful summer cutting and the observance of all precautions is saving many orchards all over the State; but the neglect of a single one of these precautions will be disastrous."

The opening of a portion of the Shoshone reservation in Wyoming, which is scheduled for some time this summer, promises to inaugurate a stampede of prospectors as well as settlers into that region.

PRUNING AND THINNING.

There is a prevalent idea that late pruning is injurious to fruit trees. All pruning is more or less an attack at the life of the tree, but if the limbs pruned are not too large late spring pruning does no injury. Some peach growers have lately put into practice the method of late pruning, to reduce the cost of raising a crop, for by the one operation both the pruning and thinning is done, and the result has bee quite satisfactory. A second thinning may be required in some cases but the work is greatly reduced through the first operation. On account of rushing work in spring the heavy pruning might be done earlier, at leisure; but trimming the small branches after the fruit has set gives an excellent opportunity for the proper thinning. An experiment was made at the California Station some years ago, comparing the regular hand thinning with the pruning and thinning combined. At harvest there was no difference in the size or quality of the fruit thinned in the two different ways, though by the late spring pruning method the fruit is necessarily grown more in clusters. Another advantage in this combination method is that a tree with a bushy top may have a better fruit set when there are slight frosts and when the time comes to do the spring pruning and thinning, the work can be so modified as to leave the most fruit should a short crop be threatened. Whether or not this plan is advisable will depend upon the individual case. Other spring work and the kind of fruit grown need be considered, but in many places it is practicable and reduces the cost of producing a fruit crop.

RUSSET OF APPLES.

No doubt many are aware of the cause of the drawback of the Yellow Newtown Pippin, viz., the amount of rust which seems to have increased from year to year at the stem end.

The U. S. Department of Agriculture, Bulletin 93, particularly speaks of the russeting on the said apple and according to their experiments they say, that it is advisable to use less bluestone and a greater quantity of lime in the preparation of Bordeaux mixture for application to the very young fruit.

The following is an extract from the above mentioned Bulletin which may be interesting:

"Russeting: The fruit on all of the trees that received the three early applications of the bitter-rot experiment on the Yellow Newtown apples developed russet spots or blotches due to the action of the copper. These blotches sometimes covered half of the apple, dwarfing the affected side. Usually, however, the spots were small and very irregular in shape, detracting little from the appearance of the apple.

"Fruits that did not receive these early sprayings were not affected, and the trouble seems to have resulted entirely from the two applications made to the young fruit on May 1st and 9th. About 50 per cent of the fruit sprayed on these dates showed some russet spots, but the disfiguration was apparently not sufficient to affect its market value materially. When russeting is feared it might be advisable to use less bluestone and a greater quantity of lime in the preparation of Bordeaux mixture for application to the very young fruit. The mixture used in spraying stone fruit (three pounds of bluestone and nine pounds of lime to 50 gallons of water) is suggested."

THE PRICE OF PRUNES.

A mass meeting of prune-growers in the Santa Clara Valley has voted, 75 to 6, to hold the price of the coming crop of prunes at the "basis price" of 3½ cents per pound. The six apparently desired to hold for 4 cents. The vote may be taken as an expression of judgment of well-informed growers as to what constitutes a fair price for prunes in view of the general outlook. It is a price which is fairly remunerative, one year with another, for orchards on good land, but would not, if contracts at that price could be made for a long series of years, justify the planting of orchards on land not of high grade. Considering the outlook 3½ cents is a fair price.

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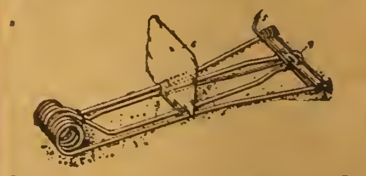

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ACTION OF LIME.

Aside from its chemical action, lime when applied to stiff clay soils renders them more friable, easier to cultivate, and better able to supply moisture, heat, and air to the plants.

Its use improves the texture of sandy soils, making them more compact and better capable of retaining moisture and fertilizers. It may be stated here, however, that sandy soils will not bear heavy applications of lime as will the heavy clay soils.

What soils need lime. Most soils will respond favorably to an application of lime. If a soil is decidedly acid or sour, lime may be applied with a great degree of assurance that benefit will follow. Its application to heavy clay soils will usually prove advantageous. The use of lime on poor sandy soils requires caution. When added to such soils it renders the plant food in them available and tends to their rapid exhaustion. It is best in such cases to add liberal supplies of potash and phosphoric acid, and rotate the crops, using cow peas or velvet beans to supply the nitrogen and organic matter.

When to apply lime. In general it may be said that during the fall is the proper time for making application. If the land is sour, the application may be made just previous to planting. The same applies if only a small amount is to be used.

How to apply. In case quick lime is to be used, it may be placed in small piles at convenient intervals and a gallon of water poured on each pile. These should then be covered with earth to protect the lime from the air. The following day the lime should be spread evenly as possible on the land and immediately incorporated in the soil with a harrow. If lumps of unslacked lime remain, the land should be harrowed a second time after a few days.

It is important that the lime be thoroughly mixed with the soil and it should never be applied and turned under.

After screening the slacked lime it may be applied to advantage with a grain drill or a lime spreader if these implements are at hand.

PREVENTION OF SMUT.

Farmers are urged to treat all their seed wheat for the prevention of smut and thus save their wheat crop.

Formalin treatment is perhaps the easiest to apply and as effective as any.

Formalin can be purchased at any drug store.

Of late numerous inquiries have been received regarding the treatment of seed wheat for the prevention of smut.

The smuts are destrutive parasitic plants belonging to the class known as fungi. There are two classes of smut which attacks our grains, the stinking smut, or bunt, which attacks wheat only, and the loose smut which attacks wheat, barley and oats. The former can easily be distinguished from the latter in its having a very characteristic odor and destroys the kernel only, while the loose smut not only destroys the kernel but also more or less of the chaff.

If some of the wheat fields of the territory be infected with smut it is only a question of time until practically all our wheat will be so diseased. The spores of the smut are carried and blown about by the wind; they are also carried and spread by the threshing machine. This calls for co-operative and persistent work on the part of the farmers, as the work of only one or two farmers in a section will accomplish very little. If each farmer who raises wheat, whether it be much or little, treats the seed carefully it will only be a few years until our fields will be free from smut. This means much to the producer, as only a small per cent of smut makes the wheat practically worthless for milling purposes.

Treatment: Mix one pound of formalin in fifty gallons of water. Place the seed to be treated in burlap sacks and submerge in the solution for ten minutes. Dry the seed and it is ready for use. If the sacks be only partially filled it will be much easier to churn them around in the solution and get all the wheat in contact with it.

Copper sulphate treatment. Dissolve one pound of commercial copper sulphate in twenty-four gallons of water. Immerse the grain in this solution for twelve hours, after which place the seed in lime water by slacking one pound of lime and then diluting to ten gallons with water.

There are other methods of treatment, such as the hot water treatment and corrosive sublimate. But these are more difficult to apply; for instance, in the hot water treatment the water must be kept at a certain temperature, which is very difficult to do on the average farm; and great care must be taken with the corrosive sublimate, as it is a deadly poison.—John M. Scott, New Mexico College of Agriculture.

CONGRESSIONAL SEEDSMEN.

If the current custom of indiscriminate distribution shall indefinitely continue, if this congressional comedy shall drift into a continuous performance, we shall ultimately be driven to the mournful admission that we are not statesmen, but seedsmen; and it will be in order for some distinguished seedsman, some sainted hero of a score of memorable distributions, some legislative knight upon whose shield is blazoned a radish in its glory or a turnip in repose, to arise in his place with becomng gravity and move, Mr. Chairman, that the American eagle be taken from the mace and supplanted by a package of vegetable seed as the supreme emblem of the genius, the character, and the principal occupation of American statesmanship.—Morris Sheppard, of Texas, in House of Representatives.

CALIFORNIA'S AGRICULTURAL OUTPUT FOR 1905.

Raisins, pounds	81,300,000
Figs, pounds	6,400,000
Prunes, pounds	125,000,000
Dried fruits, except prunes	50,000,000
Canned fruits, cases	3,000,000
Olive oil, gallons	50,000
Apricots, pounds	32,000,000
Wool, pounds	22,000,000
Almonds, pounds	4,200,000
Walnuts, pounds	11,500,000
Oranges and Lemons, boxes	12,182,400
Fresh fruits, pounds	425,000,000
Wine, gallons	36,000,000
Wheat, centals	4,700,000
Barley, bushels	24,000,000
Oats, bushels	5,250,000
Corn, bushels	1,750,000
Hay, tons	2,000,000
Potatoes, bushels	6,250,000
Asparagus, pounds	22,400,000
Beans, pounds	116,000,000
Butter, pounds	41,961,047
Cheese, pounds	7,250,000
Beets, sugar, tons	55,000
Hops, pounds	12,740,000
Lumber, feet	816,000,000
Honey, pounds	2,640,000
Brandy, gallons	1,300,000

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From thirty to forty pounds of honey should be left in the hives for winter stores.

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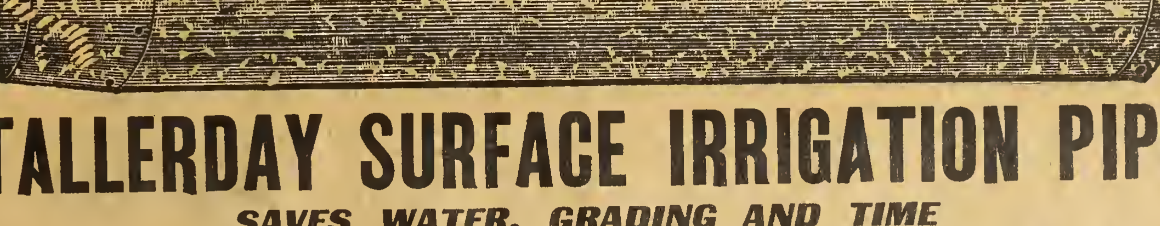

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General Agriculture

THE RUSSIAN THISTLE.

Several inquiries have lately reached us regarding the Russian Thistle. The State Horticutural Commission sometime ago issued a bulletin regarding the Russian thistle, which, by an act of the legislature the commission was instructed to take special measures to fight.

"In the first place," says the bulletin, "it should be understood that the 'Russian Thistle' is not a thistle at all. It is a tumbleweed and is somewhat related to our common American tumbleweed. It is annual, coming from seed each year, and in California makes it appearance in March and April. The first leaves are two small, tender shoots, about an inch in length, somewhat resembling grass blades. Between these seed leaves the true stem soon makes it appearance. This is lined with sharp, pointed, slender leaves, from the axis of which branches are soon thrown out. Its growth during the early stages is rather slow, and the plant, being then young and tender, is eaten by stock; horses, cattle and sheep devouring it eagerly. When about two months old the plant begins to blossom; it loses its tenderness, the stem becomes dry and rigid, with reddish stripes, the spines on the leaves become hard and the true leaves fall off. It has been estimated that a single plant of average size, from two or three feet in diameter, and weighing from two or three pounds at maturity, when dry, will bear from 20,000 to 30,000 seeds; while there have been found single plants weighing twenty pounds, with a diameter of six feet, which it is estimated, would yield 200,000 seeds.

This plant is especially adapted to California conditions, and should it obtain a foothold here would prove the most serious of any of our imported weed pests. It is well adapted to our arid conditions, maturing its seed early in the season, ready for the first north wind to start it on its journey of seed distribution. It takes complete possession of the land, crowding out other plants. Wheat, barley and oats all suffer from its effects, not only in the reduction of the crop, but in the lower grade of that which is harvested. Corn, potatoes, vegetables, and in fact, nearly all cultivated crops, are injured more or less, proportionately to their lack of care and cultivation.

"The plant is an annual, easily killed at any time during the growing season. It produces no seed before the middle of August or September, and the seed is short lived. In order to secure a complete extermination these two conditions must be fulfilled: (1) No Russian Thistle shall be allowed to produce seed. (2) There must be concerted action throughout all the infested area. If the Russian Thistle, wherever found, should be killed before it produces seed during three successive years, the pest would in all probability be completely exterminated; for the experiments already made indicate that the vitality of the seed is lost within that period."

As remedies against the weed in cultivated fields, it is said that spring crops should be sown as early as possible, so that they may get a vigorous start before the weed germinates; and the crops should be cut early before the thistle plants produce seed. The land should be plowed or the stubble burned immediately after the harvesting, and crops like potatoes and beets should be kept thoroughly cultivated as late as possible.

PAINTING FARM BUILDINGS.

The professional housepainter may suggest that the farmer or suburban home owner cannot do satisfactory work in this line, but if one has a fair degree of skill in the use of tools, and will follow a few common-sense suggestions from his local painter or others of experience, his work will compare favorably with that of the average housepainter and be a great saving in expense.

The two main objects in painting our buildings are to preserve them from decay and to add to their beauty. A coat of good paint spread evenly and thoroughly brushed into the walls and trimmings of our buildings will add many years to their durability and is a good investment aside from the added beauty that it gives them.

The best paint for preserving woodwork under all conditions is, without doubt, pure white lead mixed in pure linseed oil. Prepared paints of many kinds are offered by dealers, many of which are reliable, and being mixed ready for application, are largely used. But few of them are equal to linseed oil and lead paints and many of them contain little or none of these ingredients.

Some of the paints offered directly to the consumer are very good, and if one has not the requisite skill to mix his own, they are to be recommended. The water paints serve a good purpose, preserving woodwork for a short time, but in the end are not economical, as it takes as long to apply them as it would good oil paints and they last but a short time.

The value of any paint depends much upon how well the pigments or colors are mixed with the oil. These mixed at the factory are more thoroughly ground together than can be done by hand, yet if properly done, hand-mixed paints are nearly as good as machine-mixed. In hand-mixing white lead or any other pigment, only a small quantity of oil is to be added at a time. This is to be mixed until a perfectly smooth paste is formed, when more oil is added, until the proper consistency is obtained.

The art of mixing colors is a difficult one to master, but if only a small quantity of the modifying color is added at a time, and trials frequently made upon a surface similar to the one to be painted, very delicate shades can be obtained. If dry pigments or colors are to be mixed with oil, first make a rather thick paste and stir until it is perfectly smooth, then add more oil and stir as before. Dry colors should never be stirred into other colors, but first mixed by themselves, and then added to the foundation colors, a small quantity at a time. A careful estimate should be made of the quantity of paint that will be needed to cover the buildings with one two or three coats, as the case may be, and enough mixed at once to do the work, as it is very difficult to match any color that we may mix, unless it be done by weight or measure.

It is not best for the amateur to buy expensive brushes to be used but a short time and then leave them standing about until too hard for further use. Brushes of a large size, 2½ to 4 inches wide, are best for covering large surfaces, and the smaller sizes, oval or flat, for sash or trimmings. To keep the brushes soft from day to day, keep them suspended in linseed oil or kerosene. When not to be used for a long time, clean by working in turpentine and then rubbing and brushing on rough boards, brick or stone work until dry. Cleaned in this way, they will harden a little but can be put in condition for work by a litte pounding with a hammer. New brushes should be soaked in water an hour or two to prevent the bristles from coming out.

Thorough working in of the paint, filling up the cracks and holes and even spreading are the objects to be kept in mind. Paint should never be applied to a wet surface, otherwise it will crack off though mostly cracking or peeling is due to the paint being too thick. Parts that are most exposed, baseboards, mouldings, door jams and all joints, should receive first attention.

The first coat, especially if a long time since the building were painted, should be very thin. otherwise the oil will all be absorbed, leaving the almost dry coloring matter on the surface, and it will soon wear off. Two thin coats are much more valuable than one thick one.

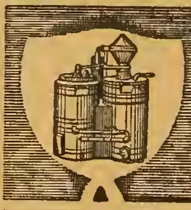
It requires a little practice to get the knack of spreading paint evenly so that the laps will not show. To do this well, the brush should be dipped about the same depth every time, spreading the paint evenly over the same space each time and finishing by drawing the brush over the last space and across about one-half of the last lap where the brush is lightly lifted, and then dip again. The sash and blinds of most houses require quite as much care as the walls. A smaller brush and more skillful hand are needed for this work.

For country houses and outbuildings, moderate colors are in especially good taste. Shades of red, brown and gray, and tints of green or yellow, if not too pronounced, are especially appropriate. The house should have the brightest and most marked colors, the barn and outbuildings being less conconspicuous than the house.

In getting over the buildings to do the painting, great care must be taken that ladders and staging used are strong and well put in place, for many sad accidents have happened from the use of weak ladders and insecure stagings.

VALUE OF FARM PRODUCTS.

The year 1905 was a banner year for the farming interests of the country, and the products of the soil have added billions to the wealth of America. The secretary of agriculture, James Wilson, in his annual report estimates this additional wealth from the farms and plantations, north and south, east and west, at $6,415,000,000, the highest amount ever attained in any one year as the value of the crops in this or any other country. New high records as to value have been made by four crops—those of corn, hay, wheat and rice—though in amount of production corn is the only one that exceeds previous yields. The production of eggs and poultry has greatly increased also.



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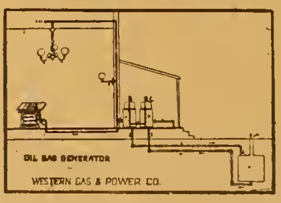

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With the Citrus Growers

BY J. W. MILLS

REPLACING ORANGE TREES.

It is often desirable to reset an orange tree in a grove that has been planted several years and it is one of the most difficult things to make it take on a satisfactory growth. When an orchard gets to be twelve or fifteen years old, we doubt if it is desirable to reset trees singly. The roots of the old trees have already taken possession of the soil and they are using it to a more profitable advantage than a young tree can for years to come. It is a question of food and water supply and it will be found that in an orchard five to ten years old the roots of nearby trees are filling the soil around and beneath their neighbors. This being the case, the old trees will easily rob the young ones and make life miserable for them.

The best method to pursue is to fertilize the soil well in a large hole that has been refilled with fresh dirt. Make the hole at least three feet deep and as wide. A couple of cow heads from the slaughter house would go well in the bottom of the hole and a liberal amount of well rotted stable manure mixed through the soil that is used to refill. After the tree has been planted, it will be necessary to supply it and all the surrounding trees with enough quickly available fertilizer to supply the demands of all. A fertilizer rich in nitrogen should be used. It will be found necessary to give extra irrigations to the new tree. The tree should be carefully selected in the nursery, one that has made a strong growth and one that is not less than one year from the time the bud started in the nursery. Do not cut the whole top off but only the soft growth. Ball it in the nursery and let it stand in a shady place for a week, giving it a light sprinkling every day. Old sacks piled around the ball will keep it from getting dry. Do not allow it to get very wet, just moist enough to allow the top to keep its shape. This treatment is better than keeping it wet before planting or planting directly from the nursery.

* * *

THE SUBSOILER.

What has become of the orange orchard subsoiler that was being used so promiscuously and almost universally a few years ago? It seems to have had its day for a time at least. It was used to wonderfully good advantage at that time, in getting a crust that had formed in a great many soils broken so as to allow the water to penetrate. A great many groves are on soil that forms a hard layer just at the point where the cultivator and plow reach. It is almost impossible to get the water through this layer of hard soil and it cannot be done with a twelve hour run of water if the hard stratum is a couple of inches thick. The subsoiler broke this up and when it was done in the irrigation furrows the penetration by irrigation water was rapid and in some places too rapid. In some cases the water ran out at the lower end of the cut before it had time to soak sufficiently on the way down.

The subsoiler was used in many instances where there was absolutely no need of it. It became a sort of fad. During the last two years it has gone out of use entirely. This would suggest that it was really of little value at any time or it would not be dropped now. This is not the case at all. Conditions have changed during the past two years. It was known to careful observers that this hard layer apparently disappeared after the rainy season where it was of not much consequence and where it had been bad during the summer and fall, it was not so at the end of even our seasons of light rainfall. During the last two years we have had an abundant rainfall and we have heard very little of hardpan and "plow-sole" in the meantime. All these features seem to indicate that it is not altogether the plow and cultivator that makes the so-called "plow-sole". Mr. Frank L. Palmer who manages the Richards' estate, presented to us this view a few years ago. The last two wet winters seem to bear out his theory which is that the constant artificial irrigation that we have been compelled to practice is the chief cause. Soils that contain certain elements will be affected by this practice while soils that do not contain them are not so affected.

Another important feature that has been evident and is of greater importance than is commonly supposed, is the earth worm. During the series of dry years which Southern California went through, this little fellow was put out of commission for he cannot work in dry soil or soil that is not kept soaked long enough for the worms to propagate several generations during one continuous period. The longest wet spells of weather which occurred during the last two winters, afforded this opportunity. We know of one eighteen-acre orchard in Riverside which was easily irrigated wth a 25-inch head of water during the period preceding the fall of 1904. The ground in the grove, like other places, presented the appearance of a pepper box in undisturbed places. The worms worked below the surface in all shaded places or where it was sufficiently wet and as a consequence the first irrigation could not be accomplished with a 50-inch head of water during the same time which 25 inches did the work before. We were on the ground and saw these conditions.

SOIL STERLIZATION.

Professor Wm. Stewart, in the eighteenth annual report of the Vermont Agricultural Experimental Station, describes a system of soil sterlization in solid beds in the greenhouse, in which tomatoes and cucumbers were grown, that proved successful against nematodes. He says:

"Since the larger portion of the space devoted to these crops was occupied by solid beds, it was thought desirable to attempt sterlizing this soil in place. Three-inch (two-inch tile might have served, but were not at hand) drain tiles were sunk about ten inches below the surface of the soil. The lines of tile were laid every sixteen inches, each line being independent of every other, and connected with the surface by a vertical section of drain tile. The ends of each tile were plugged with paper and soil. The upright was connected with the laterals by a hole drilled through the upper surface of the end tile over which it was securely cemented. The verticals were connected alternately at one end or the other of the laterals, thus permitting live steam to be injected at opposite sides of the bed, and thus equalizing the diffusion of heat throughout the soil. Not only were the tile joints open, but each section of tile was perforated with a quarter to a half-inch hole through each side, the better to facilitate the escape of steam. Under a pressure of from 40 to 60 pounds of steam, a section of bed containing a surface area of nearly seventy square feet could be heated up to about 210° F. in approximately three hours' time. The surface of the soil being well covered with burlap, this temperature was maintained for a considerable period. In one case noted the thermometer stood at about 210° F. 24 hours after treatment. This procedure proved in every case an effective remedy against nematodes and obviated the labor involved in treating the soil in a box or other specially constructed device. The tile once placed lie so deep that they need not be molested in digging over the beds or in changing the soil, and are always ready for use in subsequent treatments of new soil. Then, too, the surface connected by means of vertical sections afforded ideal soil areation."

An experiment in sterilizing soil in place in sub-watered benches proved that it is not a desirable practice.

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First National Bank, Los Angeles, Cal.

The Ornamental Garden

BY ERNEST BRAUNTON, LOS ANGELES, CAL.

EUCALYPTUS.

There are about 120 different varieties of this tree, over 40 already introduced in this State. The most common in Central California are E. viminalis, E. robusta, E. rudis, E. globulus, and E. rostrata.

From close observation and no little study during the past 17 years I find E. viminalis, or "manna gum," the most valuable for general purposes. This variety grows rapidly, splits more easily than other varieties (though none splits easily), and its fuel value at the age of ten years is about 85 per cent of that of oak. It should not be used for fuel much younger. It has a fine grain, and takes a high polish without any filler; will not be gnawed by stock; is the most hardy variety; will grow on pretty strong alkali soil; never sprouts up from the root, but will sprout up from the stump when cut down; and the bark, which this variety sheds at all seasons of the year, being of a resinous nature, makes excellent kindling, and can be easily broken with the hands.

All varieties of this tree are evergreens, but not good dooryard trees, on account of their leaves, which they shed every day of the year.

These trees should not have their lower branches trimmed off till they are five or six years old, as they grow out and droop to the ground, thus supporting the trunk, which, when trimmed up, has a tendency to grow any way except erect.

I have seen E. globulus in the Sacramento Valley killed by frost when E. viminalis was not touched in the same locality. It is the opinion of the writer that, in localities where the temperature falls below 20 degrees, and remains several hours the eucalyptus would be in danger of being killed, though some varieties might withstand such temperatures.

It is difficult to get some varieties of eucalyptus from the nurseries true to name, as they closely resemble each other, and the temptation to substitute is very strong. I should want to examine personally before purchasing. They will not grow from cuttings, but must be propagated from seed.

Timber from the eucalyptus rots in a short time if put in the ground, but anywhere else it will last as long as any common wood.

It is the belief of the writer that no other variety of forest-tree in Central California will equal E. viminalis to plant on our farms for profit, and I hope to see more large groves in the near future.

E. robusta, which blossoms in October and November, secretes the greatest amount of nectar I ever saw in any one flower, and the bees give it almost their entire attention.—J. C. M.

OUR NATIVE PENSTEMONS.

Every one who loves flowers at all, admires the beautiful wild-flowers with which our hills and plains are so abundantly bedecked. Almost no one cultivates them, and yet with the increase of population, and the rapid expansion of cultivation, they yearly are becoming harder to find.

It is different in Europe. If you look in the catalogue of any of the great Erfurt seedsmen you will find scores of our California plants. In England a seed-grower calls his seed farm "California," because he makes a specialty of Californian plants.

What is a Penstemon? If at present you see a shrub, or a perennial herb, bearing showy tube-shaped flowers, red, purple, or yellow, you may guess it is a Penstemon. If you wish to be sure you will have to go a little into technicalities. Pull it open, see if the immature seed vessel is pointed; now count the stamens; if they are five in number, and one of the five has no anther, you may be certain it is a Penstemon. These five stamens give it its botanical name, its nearest relatives having only four. The barren stamen is often densely bearded, which gives it its common name, Beard-tongue.

The flowers may be either narrowly tubular, like a scarlet honeysuckle, or widely tubular, like a trumpet flower. We have half a dozen of the narrow-tubular kinds, and all of them have red flowers. Two of them are shrubby, and they usually grow among bushes, where their long, slender stems can find support by scrambling over their more rigid neighbors. One of them has somewhat heart-shaped leaves, from which it takes the name of Heart-leaved Penstemon (P. cordifolius.) It has clusters of deep scarlet flowers; but those of the other are duller and smaller, and not particularly handsome. As its leaves are long and narrow, it may be distinguished as the Narrow-leafed Penstemon (P. ternatus).

The other red-flowered ones are all perennial herbs. The commonest, which grows everywhere on sandy plains, has a very narrow flower, and the upper leaves clasp the stem. I have heard it called 'Wild Honeysuckle;" botanists call it P. centranthifolius. On the desert side of the mountain there is another, very much like this one, but with flowers of brighter red, and somewhat wider. This is known as Eaton's Penstemon (P. Eatoni). You also may occasionally find in the canons on this side of the mountains, Bridge's Penstemon (P. Bridgesii), which you will recognize by its very narrow leaves, and somewhat woody-based stems. But the handsomest of the red species is the Long-lipped Penstemon (P. labrosus), known by its broader leaves, and the long lips of the flowers, the lower ones bearing a yellow beard This is common in the mountains.

There is but one yellow-flowered species, (P. antirrhinoides) the name meaning "snap dragon-like," and the resemblance is a close one. It is a good-sized bush, growing on dry mesas or hills, and flowering in early spring. The purple-flowered species are four, and their flowers are all ample, and not narrow like the red species. The most common species is the handsomest, and its name (P. spectabilis) indicates how well worth looking at it is. It is a foot-hill plant, and forms a small, soft-stemmed shrub. The flowers, which are borne in a fine panicle, are large and showy, with a beautiful metallic luster. There are two varieties, one blue-purple and the other rose-purple. The others are herbaceous perennials. One very beautiful species is quite abundant in some foot-hill canyons, but not in all. It grows in clumps and produces a great abundance of handsome flowers, either blue-purple or pink-purple in color, and its stems are somewhat woody at the base. Its botanical name is P. heterophyllus, but I hope some one has a good common name for it.

The other two species grow in the mountains, where one of them, Palmer's Penstemon, is common. It has very large flowers, light blue, with darker lines. You can make quite sure of it by examining the sterile filament, which has a dense yellow beard at the apex. The other mountain species is much rarer, and may be recognized by its deep blue, or violet-blue flowers, and the very slightly bearded filament. Its name, P. glaber, may be translated as the smooth-leaved Penstemon.—S. B. Parish.

THE HOME GARDEN.

Happy is he who has a home, though it be but four square walls; doubly happy is he, if the possessor as well of a strip of mother earth, that he may have a domain all his own; thrice happy is he, whose home grounds are bright with bud, and leaf, and bloom, rejoicing the eye of the passer-by and bringing happiness and content to the home of the inmates. The happiest days of the human race were spent in Eden's garden, and the nearest approach to an earthly paradise today is still the garden, embowered in Nature's richest green, and gemmed with lovely flowers and luscious fruits, where under one's own "vine and fig tree" one can rest or wander at will.

The ideal garden is one where there is something in bloom from the time of the snowdrops of earliest spring, to the chrysanthemum of latest autumn. The chief charm of the garden lies in the ever-changing panorama of leaf and bud, of bloom and fruit; the seeing of today of the first bloom of some rare and unknown flower; the beholding tomorrow of some old-fashioned blossom, dear from the days of childhood.

The ideal gardener will not cultivate one class of flowers to the exclusion of all others. He will find room in his garden for the gay bedding of plants that make gorgeous the long mid-summer days with their flames of orange, scarlet, and vermillion; he will find room also for the dainty for get-me-not, and the modest violet; room for the queenly lily and the fragrant rose; for gay tulips, and the sturdy perennials that resist alike the heat, drought, and rain; he will find room for palm and myrtle, canna and coleus, for shrub and vine; for all in short, that is bright and beautiful, or fragrant and refined. Such a garden is a delight to plant, a pleasure to labor in and a delight to look upon.

It is true that those with limited grounds cannot grow such a variety and multiplicity of floral treasures; but it is just as true, that most people could have more variety than they do if they would but put forth a little mental effort in planning and calculating. In thousands of homes now almost bare of flowers, all we have mentioned, and even more might easily be grown. Such a variety requires no more room than any good-sized yard will give.

A little calculation will show how many beds can be made and placed to the best advantage; along such a division fence a rose hedge can be planted, or a long border made for perennials; here a tree, a shrub, or a vine can be planted, a rockery built, a water-garden made.

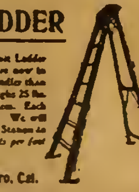
Probably no two persons would plan their gardens exactly alike, but this is an advantage rather than otherwise. There is a charm about a garden that expresses its owner's individuality, that is lost in those gardens which are copied from someone else's plans.—Lora S. La Mance.

Paper pots are a great boon to shippers of plants in pots. Knocked out of the ordinary pots and tied up in paper ones they are easily and safely shipped.

Petunias stand the sun well and make very desirable bedding plants for California. The improved strains are very handsome and should not be overlooked when allotting space in your garden.

Gunner—They say, despite their lethargicness, the people of Philadelphia are dead game sports.

Guyer—I should say they are dead-game sports. They still play ping-pong.—Chicago Daily News.



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In the Vegetable Garden

BY ERNEST BRAUNTON

POTATO CULTURE.

Perhaps no plant needs a good, rich soil, or pays for it better, than the Irish potato, and yet how many are there who are negligent in the selection and preparation of their potato ground.

Soil of a sandy loam nature is the best adapted for the growing of potatoes. The ground should contain an abundance of humus so that it will remain loose and mellow, thus giving the tubers a chance to grow. Virgin soil, old alfalfa patches or land on which an abundance of green vegetation has been plowed under will make good potato ground. Plow deep at least two times, the last time just before planting, and then thoroughly pulverize. Do not crop too often or use scabby seed, as the ground will become infected with the scab germ and potatoes produced will be unmarketable. Dipping seed potatoes in a solution of corrosive sublimate, 2 ounces to 15 gallons of water, for one hour and fifteen minutes will destroy any germs that may be on the potato.

Select seed of medium size, smooth and well formed. Letting seed remain in the sun for from four to six weeks will better mature them.

Cutting of potatoes is a subject on which a great many have different opinions. Some claim they have better success when cut in halves; some plant large pieces and some plant small ones. while still others tell of mammoth crops having been grown by peeling the potatoes thickly and planting the peeling. Although we have tried several methods our best success has been obtained by clipping off the seed end and cutting one eye to a piece.

The variety to plant depends largely on the market for which potatoes are to be used. For early market Early Rose and Early Clark are generally planted. For summer shipment to Colorado, Arizona, Texas and New Mexico, it is necessary to have a potato that is a good shipper, tough and firm, namely the Snowflake and Pearls. For a fancy potato, one that will take the place of the fancy northern Salinas in quality and appearance, the Burbank has proven itself the best.

Planting.—In the spring, plant at a depth of from 3 to 4 inches, and from 5 to 6 inches in the fall to keep seed from rotting. The rows should be at least three feet apart, and potatoes planted from 15 to 17 inches in the row. Before potatoes are up harrow thoroughly to destroy small weeds and loosen the surface of the ground. When about 3 inches high cultivate close and deep, as it is injurious to the plant to cultivate close after plant is large.

Spraying for blight.—As the Borreaux mixture is a preventive, not a cure, potatoes should be sprayed before blight appears. It is best to spray when the plants are about 5 or 6 inches high and at intervals of 15 days until the vines have received their growth. Five pounds bluestone and 5 pounds fresh unslacked lime to 50 gallons of water is the formula generally used.

Irrigation becomes a necessity when the natural moisture is insufficient to properly nourish the plant; but persistent cultivation will do away with a great deal of irrigating and thereby produce a better quality of potato.

Marketing.—Los Angeles almost always furnishes a good market for our fall grown potatoes, while Arizona, Texas, New Mexico, and Colorado generally take the surplus in the summer time.

It is very essential that we grow a fancy potato for our home market as the north can produce immense crops of poorer quality potatoes at a great deal less expense than we can, and it is only by growing fancy potatoes, which are always in demand at good prices, that we can compete with the north.

We should put up an article on which we are not afraid to put our name or brand. It is only the product that is put up right we can recommend to the wholesaler, and he to his customers, to be as represented, that command the best market, and many farmers make a great mistake in trying to run in a few inferior potatoes or chillis or whatever it may be, and thereby spoil the appearance of the balance.—Geo. L. Wagner.

CANNING TOMATOES.

The subject of canning tomatoes has been discussed by our growers in some sections, and a great deal of advice has been given on that subject, and communities condemned as not progressive because so many tomatoes were allowed to waste in the field. Speaking from contact with canning factories, this allowing tomatoes to rot is rather commendable than otherwise. It is not an easy matter to convert oneself from a tomato-shipper to a tomato-canner. It requires experience, skill, forethought and close economy to make it pay. The tomatoes must arrive at the cannery in a constant quantity daily, so that hands are not idle for want of tomatoes on the one hand, and on the other hand that the force may be able to work up all that comes in. Ripe tomatoes handled roughly and lying in large piles rot in a short time. Another consideration is that the plant in most districts would be idle for about eight months. As soon as we shall diversify our vegetable and fruit crop so there will be material to can and dry for eight or ten months in the year factories for these purposes will be established in more sections. This whole matter has been considered very carefully by persons of means with a view of engaging in this business, but it is yet too uncertain to warrant the investment of the required capital in the smaller districts.

CULTIVATING ONIONS.

"Tillage is manure," is an old and true saying, but in cultivating onions we must be careful that it is done properly. There are just two points to be kept in mind when cultivating onions; the first is to keep the weeds down, and the second is to conserve the moisture in the soil. The former of these is well understood by all gardeners and needs but to be mentioned; the second, however, is usually overlooked; many people recognize the value of working land during dry times, but do not know why it has the desired effect on the crop. At least an inch of lose soil should be kept on the ground as a mulch during dry times.

For hand cultivation the double wheel-hoe is undoubtedly the best machine now on the market. Whatever tool is used it should not penetrate more than an inch and in no case touch the bulb of the plant. In the onion-growing sections the land is too costly to permit the use of a horse, so the wheel-hoes are used exclusively.

The workers in the field should carry a bag with them to receive large weeds that may have been missed or allowed to grow to flowering size. All large weeds are carried to the edge of the field and thrown in a heap to rot. There are very few fields that are free enough of weed seed to grow a crop without hand weeding; this should be done with a knife, i. e., large weeds should not be pulled when growing in the row. For this purpose there are knives made, which may be obtained from most supply stores, but an old case knife may be bent up into good shape without costing as much. The point is turned up to lessen the danger of hacking into the plant as the hand works along.

The ordinary garden hoes do not work well in the onion field; a worn out one that has been cut down to one-half its width, so as to leave the corners obtuse, will work pretty well. All tools should be kept as sharp as steel will permit; a dull hoe will soon use up more time than would buy a new one.

TESTS OF VEGETABLES.

Olericulture, or vegetable gardening, is progressing, and to keep abreast of the times some little attention must be paid to it. During the season of 1894 the Horticultural Department entered upon this line of work for the first time.

The testing of the seeds of new varieties which seedmen and private individuals are continually offering in their attempts to find something better than we already have, is an important work, and one that requires labor and expense as well. In itself it is a very simple matter, but the average farmer and gardener cannot afford to spend his time and money on an extensive test.

SURE SEAL

Home canning of vegetables, meat and fruit made easy and certain by The Economy Jar

To give you an idea how easy it is to can fruits, soups, vegetables, meats, etc., in the Economy way—Note the wide mouth—how easy it is to put your hand in and thoroughly clean the jar. No rough seams inside or out to catch lint, chip into food or scratch you. After pouring the contents in hot and wiping rim of jar, clap on the gold-lacquered cap (acid-proof.) No screwing, twisting or prying. Just press the cap on gently. No bruises, burns, cuts or sprains when you use the Economy. Put clamp on top to hold cap in position while contents are cooling. The cooling forms a vacuum and holds cap on firmly. Jar is then absolutely airtight. Next day remove clamp, which lifts off lightly. If the food was cooked enough cap is held tight by vacuum, and contents cannot spoil, as no air can leak in. If cap loosens, contents were not cooked enough to sterilize, and can be heated again and saved. The Economy automatically informs you if contents are in proper condition to put away. When ready to use, puncture cap with can opener and pry off lightly. No sprained wrists, no unscrewing, no hands gashed by broken glass. No glass particles in food; no smelly top; contents fresh and sweet as the day you put them up. No separate rubber rings required. The Economy is the jar you will use with comfort and satisfaction year after year. There is absolutely no jar that looks like, works like, keeps like, seals like, or opens like the Economy. Using some other jar *cannot* give you any notion of what the Economy really is and what it really will do. Try the Economy for yourself. Ask your dealer for it. Send his name and we will send you, free, a booklet of recipes. Write direct to main office.

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20c
dozen

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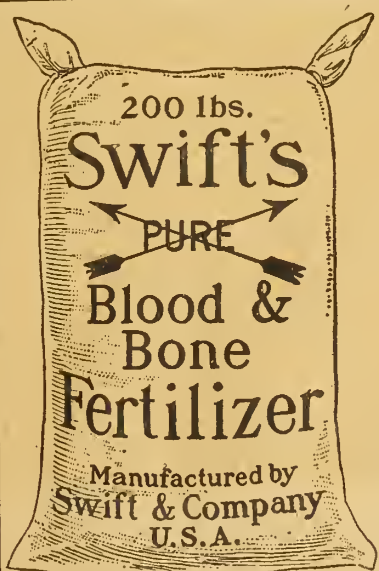
145 North Fourth St., Portland, Oregon
Eastern Office, Department I, Philadelphia, Pa.



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Potash, Actual K² O - - 10 Per cent.
Equal to Sulphate of Potash - - 18.50 Per cent.

produces early and strong growth of plant, better setting of fruit and a full development of crop. Makes top market prices. In considering your soil management for this season it will pay you to get full information and prices from our nearest dealer. Better still—address us direct. Sign your name to coupon, cut out and send to us and we will send in addition to the desired information, a copy of our California Fertilizer Book.

Swift & Company
U. S. A.

Swift & Company
Fertilizer Dept.
Chicago

Name ....

Address ....

CALIFORNIA CULTIVATOR

ESTABLISHED 1889

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J. J. STEADMAN, EDITOR

H. A. PERKINS, ASSOCIATE EDITOR
AND ADVERTISING MANAGER

FRANK HONEYWELL, BUSINESS MANAGER

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When ordering a change in address, subscribers should be sure to give their former as well as their present address, in order to insure desired change.

Date on wrapper or on address slip shows time paid to, thus: John Smith, 1-05, means subscription is paid to January, 1905.

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Intensive Farming.—The California farmer has not yet learned the value of his land nor will he until he has brought it under that intensive culture which alone will yield maximum results. Our farmers have too long been following the lines of least resistance, growing one crop continually, without returning any fertility to the soil, until we now have tens of thousands of acres which refuse to longer yield a profitable crop of wheat.

Our farms need dividing; land with such marvellous possibilities is too valuable to be farmed in large tracts. Our farmers must practice rotation of crops to preserve the natural richness of the soil. In addition to diversified crops he must keep a few cows, consume a part of his dairy, garden and field produce, which will go far to safeguard him against crop failures. He will not have "all his eggs in one basket;" such a course is neither necessary or desirable. Eventually, California will be one vast farming community instead of vast stretches of ranches miles in extent as is often the case in some sections. If we develop our possibilities to the fullest, gifted as we are with soil and climatic advantages second to none, we shall in time be known as the world's greatest and most favored garden spot. What we need is more scientific farming, not "book larnin" altogether but so much of it as will enable us to get the best possible results from an acre of soil, leaving far behind that "good old time farming" which depletes the soil of certain elements of fertility while leaving others unused. We must get away from those methods which impoverish both the farm and the farmer. To do this we must have each farm maintained at the highest possible point of cultivation and this is possible only with scientific intensive farming.

* * *

The Hay and Grain Crop.—Except for the damage visited upon our fields by the recent storm, California would doubtless have harvested the heaviest crops of hay and grain, acreage considered, that she has grown in the last decade.

Conditions for a heavy and satisfactory crop of hay have been present in nearly all sections throughout the entire season. Much of this crop was, most unfortunately caught in the field either in cock or swath, but a very small per cent being under cover. While the price per ton will be slightly less than expected, the crop will be enormous, the rains having no effect upon the total tonnage, and the outlook for a strong demand is all that could be asked.

Grain crops have not escaped so fortunately, and it is expected that the hay crop will be further swelled by a large amount of intended grain crops now impossible to harvest except as hay. From all districts reporting up to time of going to press, it appears the damage has been great. Some farmers have had their entire acreage laid as flat as though a band of elephants had marched over it. The rains came at a most inopportune time, for the heavy heads that the grain in all parts had developed, will prevent it from straightening up. Careful cutting will, of course, save a great deal; yet, if subsequent weather prove unfavorable, much of that blown down will be a total loss. As we were promised a demand unusually strong, it may be that correspondingly high prices will cover a large part of the losses now confronting our farmers throughout nearly all grain-growing sections.

* * *

Farmers' Organizations. — When we consider what a stupendous factor the farmer is in the maintenance and enrichment of our country, we cannot but pause and wonder at the complaints we so commonly hear, that he cannot obtain justice either at the hands of the buyer or transportation companies. It really seems that with proper organization the farmer might control the greater volume of the nation's business.

Let us see what he produces. Last year the American farm crops reached the astonishing total of six billion four hundred millions of dollars, an increase in a twelve-month of one billion five hundred million dollars. How stupendous these figures are can be guessed when it is known that all the gold mined in the world for the last four centuries could not equal in value what the earth yielded up to man in the past two years. These are plain figures—the comparison with the gold output may easily be verified by applying to the Agricultural Department reports—yet our farmers, as a whole, consider themselves helpless when confronted by a puny railroad with a rise in freight rates, or by an organization of buyers offering a reduction in market prices.

That farming, in a broad sense, is a remunerative business is proved by the fact that our agricultural lands have increased in value, in five years 60 per cent. To make life happy the tiller ot the soil has his telephone, his daily delivery of mail, and, in many cases, the railroad or trolley car to bring him to town. He is, in most lines, a skillful man and brings science to bear to outmaneuver the pests which are ever preying upon his field or orchard crops, yet from the persecutions and unjust discriminations of his fellowman, he is apparently helpless.

A business man speaking at an Eastern farmers' meeting covered the mooted point in the following terse speech:

"Unfortunately, or fortunately, as the case may be, we do not live in an age when crops will thrive and yield us an abundant increase with little effort and with disregard of modern and scientific methods. The successful farmer of today must study the nature of soil, intelligently select his seed and must better the standard of his live stock if he would be in a position to compete with the intense farmers of the wide awake agricultural sections.

"It is conceded that the success of commercialism depends upon the prosperity of the farmer. No man, or set of men, can create a panic as long as the farmer is prosperous. But it is only by intelligent application that he can become prosperous in a marked degree—it is only by his lending his aid to the movement of bringing about a community interest that he can resist oppression.

"Why should the farmer remain upon his farm, unmindful of what is going on in the world around him, while men in other walks of life are figuring his output to the bushel and are fixing the price to a cent?

"I take it that if the success of the nation depends upon the success of the farmer, it is to the interest of the country, as a whole, to give the farmer the opportunity to prosper. The success of the State and of the Nation depends upon an equitable adjustment of the business relation of the agricultural and commercial interests.

"When we realize that every other phase of life is organized for a mutual benefit it is a matter of wonderment that the farmers have continued so long fighting their battles alone. The farmer can never hope to attain that degree of success which is due him unless he comes to a realization of the fact that in unity there is strength.'"

Printers' Ink Says the Cultivator Leads

Has the Largest Circulation of Any Farm, Fruit or Stock Paper in the State

In its issue of March 28th, 1906, "Printers Ink," a journal for advertisers published at New York, printed a list of all papers published in California having a circulation in excess of 1,000 copies during 1905. From this list we give the following excerpts, which includes all Horticultural, Agricultural, or Stock papers rated by Printers Ink as having a circulation in excess of 1,000 copies each issue:

Los Angeles, California Culivator, weekly:

Copies printed: Have advanced from 3,916 in 1896 to 8,107 in 1903, 10,317 in 1904, and 10,699 in 1905. This paper is entitled to a place on the Printers' Ink roll of honor.

Los Angeles, Saturday Post, Weekly:

Copies printed: 5,471 in 1901, credited with more than 4,000 in 1903 and 1904, and with more than 2,250 in 1905.

Los Angeles, Live Stock Tribune, monthly:

Copies printed: This paper had credit for an average issue of 2,601 in 1901, since which time it has not furnished a report, but was credited with printing more than 1,000 copies for the year 1905.

Los Angeles, Rural Californian, monthly:

Copies printed: This periodical never furnished any complete and satisfactory circulation report, but had credit for printing more than 4,000 copies in 1900 and more than 1,000 in 1905.

Petaluma, Poultry Journal, weekly:

Copies printed: This paper had credit for an average issue of 1,163 for the year 1903, but has not since made claim to issuing so many as 1,000 copies.

San Francisco, Breeder and Sportsman, weekly:

Copies printed: This paper has never furnished a definite and satisfactory report but has had credit for issuing more than 2,250 copies for the years 1903, 1904 and 1905.

San Francisco, California Fruit Grower, weekly:

Copies printed: This paper has never furnished a definite and satisfactory report but has credit for printing more than 1,000 copies since 1900, including the year 1905.

San Francisco, Pacific Rural Press, weekly:

Copies printed: 8,861 in 1901, since which no definite and satisfactory report has been filed, but was credited (probably erroneously) with issuing more than 7,500 in 1905.

San Francisco, Live Stock and Dairy Journal, monthly:

Copies printed: 5,858 in 1904, and in the absence of any report had credit for printing more than 4,000 in 1905.

San Jose, Fanciers' Monthly:

Copies printed: This paper had credit for an issue of 2,400 in 1894, since which time it has not furnished a definite and satisfactory report, but was credited with printing more than 1,000 copies for the year 1905.

San Jose, Town and Country Journal, monthly:

Copies printed: 6,135 in 1903 and 9,125 in 1904. In the absence of a report was credited with printing more than 7,500 copies in 1905.

In a paragraph closing the list of papers, Printers Ink says: "It is not supposed that any California paper not named in the list printed above makes any claim, or has the past ten or twelve years made any claim to issuing regularly as many as 1,000 copies."

As Printers Ink is probably the best rating authority in the United States as to circulation it will be seen from the above the Cultivator is the only paper of its class in the Sate that has an actual average weekly issue in excess of 10,000 copies.

Advertisers can study the above list with profit.

NEWS OF COUNTRY LIFE IN THE GOLDEN WEST

HORTICULTURE.

Redlands reports a fine apricot crop.

Toluca's cot crop will total $30,000.

Hanford shipped apricots on May 20.

Solano county plums are on the market.

Around San Jose cherries are but half a crop.

Vacaville shipped her first peaches on the 21st.

Gilroy is making heavy shipments of strawberries.

Almonds and pears at Gilroy will be a splendid crop.

Ventura apricots are contracted for at 10 cents, dried.

Black Mission figs were ripe at Coachella on May 13.

Kings county shothole fungus is fast disappearing.

Marysville has shipped over eleven cars of cherries to date.

Napa county grapegrowers are being offered $30 per ton.

Julian apples escaped the late frosts and will be a good crop.

Four acres of apricots at Hanford sold on the trees for $500.

Sargent is making heavy shipments of Longworth strawberries.

Oakland takes all the Pajaro valley strawberries at $6 per chest.

Auburn reports that rain damaged small fruits, but helped feed.

Buyers are offering $25 to $35 per ton for cots around Redlands.

The Toluca fruit growers sold their apricot crop for $34 per ton.

Colusa reports the hay crop damaged by rain at least 50 per cent.

Late-sown grain will be the only crop benefited by the recent rains.

A Riverside grower realized $5.50 per half-box for 24-size grapefruit.

Hail did considerable damage to fruit trees about Redding last week.

The grapegrowers of Sutter county have organized to get better prices.

The Pomona Fruit Growers' Exchange paid $25,000 last week to growers.

An orchard of several hundred trees slid down into the river near Redding.

The Salton sea rose six feet last month and spoiled many valuable acres.

Vacaville has a new cherry of exceptionally large size, called the "Bassford."

The San Dimas Exchange is shipping twenty-five cars of citrus fruit each week.

Reports from Sacramento state that cherries and berries are badly damaged by rain.

All apricots now on sale in Southern California came from north of the Tehachepi.

Riverside gets the Southern California branch of the University Experiment station.

The grape growers of Sutter county have organized in an endeavor to secure better prices.

A car of San Jose cherries sold in Boston last week for $4960, or over 22 cents a pound.

W. H. Boucher, pomologist for New Zealand, is "nosing" over our State to learn all he can.

The cherry crop around Vacaville and Suisun will be a stunner unless the rain damages it.

Agents are in the field for apricot pits to be shipped to Germany as a substitute for almonds.

The Pajaro Valley Board of Trade received a gold medal for straw berries sent to the Portland Fair.

The Santa Clara grange reports on peaches: Muirs, good; Crawfords and Fosters, fair; Salways, a failure.

AGRICULTURE

Exeter farmers want 200 field laborers.

Chino has finished her beet planting.

Gilroy will have an enormous barley crop.

Hops are selling at Healdsburg for ten cents.

The hay-balers of Yolo county have organized.

A Hanford company will reclaim Tulare Lake.

Beans and beets about Las Posas promise well.

The Stockton potato crop will be enormous.

Hay experts say prices will be good for this season.

The cream of Kern county's lands are under water.

San Jacinto is shipping three cars of hay per day.

Red Buff reports immense damages to crops by rain.

Exeter reports great damage to grain from recent rains.

A Niles farmer says "hardly room enough to cock my hay."

Escondido reports grain rusting badly on account of fog.

Orange county shipped forty two cars of cabbages last week.

Cantaloupe picking in the Imperial valley will begin next week.

The first California apricots went East on May 15, from Winters.

San Fernando Valley will have a bumper crop of grain and hay.

The Whittier Vegetable Growers' Association organized last week.

Glenn county farmers will go back to reapers and binders this year.

Farmers about Healdsburg say the rain did more good than harm.

Olive, in Orange county, is shipping large quantities of cabbage.

Brawley is shipping large quantities of cucumbers to Los Angeles.

Escondido farmers are cutting heavily for hay because of no grain sacks.

Clarkston, Washington, is shipping lettuce and garden truck to Montana.

Twenty thousand acres about Imperial were sown to alfalfa last year.

The grain harvest for 1906 in the Imperial valley will be "the largest yet."

Hop prices for old crop have gone up on account of the losses in the Frisco fire.

The Reclamation Service will soon purchase machinery to use on the Klamath project.

Perris farmers were caught with most of their hay crop down when the rains came.

Washington and Oregon report crop prospects good, but most sections need more rain.

Near Petaluma some grazing lands are so badly cracked as to be dangerous for cattle.

Whittier gets the Southern California Pathological Laboratory of the State University.

The San Antonio Fruit Exchange received for its several associations $231,000 in April.

The San Joaquin river peat lands will yield the heaviest crop of asparagus yet harvested.

Hanford reports best crop of hay and grain, barring rain damage, they have had in twenty years.

Pullman, in Washington will hold a monster farmers' meet in June, when Secretary Wilson is expected.

J. H. Patton, of Highland, is doing his orange orchard cultivating with an automobile cultivator of 16-horse power.

G. J. Holloway, of Brawley, was the first cantaloupe shipper of 1906. About two acres of his went down New River.

Unreliable help is causing the large grain farmers of Central California to abandon the large harvesting machines for one man harvesters.

The express shipments from Escondido last week were 115 cases eggs, 2,700 pounds cream, 2,550 pounds butter, 2,008 pounds chickens and 2,610 pounds vegetables.

LIVE STOCK.

"Foul brood" of bees is common about San Diego.

Sheepmen in the North are jubilant over the late rains.

Lack of rain has run feed short in parts of Washington.

Piru beekeepers say a worm is eating the sage blossoms.

Wool about Marysville sold last week for from 22 to 28 cents.

Elsinore says: "Too much foggy weather for bees; honey crop light."

Feed for stock will hold for a longer time this season than for many years past.

The Sonoma County Poultry Association have contracted their eggs for June at 18 cents.

High water washed away many thousands of young fish from the hatchery near Redding.

Since the earthquake, cattle in the affected districts are easily frightened and may easily be stampeded.

The government has undertaken to superintend the introduction into this country of the sacred cattle of India for breeding purposes.

FARMERS' CLUBS

The Corona Farmers' Club met at the home of D. K. Wilson on May 21st. Two very interesting papers were presented. The next meeting will be held at the residence of the Platt sisters on June 4th, when it is expected by-laws will be presented and organization perfected.

The Covina Valley Farmers' Club met last Saturday at the pleasant home of Mr. and Mrs. R. J. Clizbe. The next meeting will be held at 2 p. m., Saturday, June 16th, at the residence of Mr. Robert Smith at Mountain View, on the Ruddock place, at the east end of the San Bernardino road.

FREE SEEDS.

The Congressmen can go on as usual, fondly deluding themselves with the belief that the seed appropriation solves the difficult problem of making themselves "solid" with the rural constituent. It would be highly interesting to know just who gets this particular something-for-nothing. One can travel far and live long in the country without ever running across a farmer who has more than heard of the Government's seeds, or who ever made an effort to get any of them. In the villages it is a little, but not much, easier to find a few packages of them. The idea that they affect either agriculture or politics to any appreciable degree never enters the head of anybody except the Congressmen and a few heelers. Why should it? There is no imaginable reason for supplying free seeds to farmers—no more than for supplying free hose or free straw hats or free pianos. The whole thing is wrong and disgraceful and corrupting—so far as it is not a mere miserable farce. There is nothing like a public demand for this use of the public money, and that it continues is even more humiliating than outrageous. The Congressmen will never learn this, apparently, until the farmers take the trouble to tell them that, like a too well remembered judge, that they are not now taking small bribes. They cannot do it too quickly.—N. Y. Times.

NOTED PLANTERS.

Trees were planted on the Capitol grounds at Washington by John C. Calhoun, Dixon H. Lewis, John Davis and Charles Sumner. Calhoun planted a live oak, Lewis an ailanthus, Davis a sugar maple and Sumner a Scotch beech. They all died except Sumner's Scotch beech, which not so much proves a "survival of the fittest" as that Sumner had special care bestowed upon it during his own lifetime.

LINER ADVERTISING

Advertisements in Liner Column will be charged 1¼ cents per word. No advertisement taken for less than 25 cents. Eight words to a line.

LINERS

FOR SALE—A FEW THOUSAND BLUE Gums, cheap to close out. Address L. Z. Huntington, Anaheim, Cal.

WANTED—WILD TURKEYS EGGS AT $100 00 per setting. Address only The Grace Glory Grounds, Brawley, Calififornia. Wilds of wild Turkeys (acclimated).

BLUE ANDALUSIAN EGGS FOR HATCHING, from three noted strains, $2.50 and $3. Incubator lots $7.50 to $15.00 per 100. Mrs. T. R. Griffith, 3111 Walton avenue, Los Angeles.

FOR SALE—OR EXCHANGE FOR TOWN or ranch near Los Angeles or north inland from coast, poultry and fruit ranch of 33 acres, shipping canning and drying fruits. All under cultivation and good improvements. Two hours' ride from San Francisco by cars, one mile from town. Address Box 64, Sonoma, Cal.

HEALTHFUL VEGETABLE COOKING oils, free from disease. Inexpensive. From corn, cotton and olives. Tiny samples 1c each. Also honey and olives. Address W. S. Ritchie Corona, Cal.

ARE YOU INTERESTED IN FRUIT CANNING? We have a book free describing six sizes of canners for the ranch or small factory, ranging from $10 to $125. Send postal with address for it. W. S. Ritchie, Corona, Cal.

TWENTY ACRES ORANGES, APRICOTS, walnuts and assorted fruit, 15 shares of water stock, cement ditch, good improvements. One-half mile from depot. Price $6,500 if sold before July first; half cash. L. B. Lauridsen, Route 3, Anaheim, Cal.

Live Stock and the Dairy

BY MRS. MINNA. E SHERMAN, FRESNO, CAL.

PURE BRED SIRES.

Among the questions presented at the Farmers' Institute, that of the real value of pure blood in the stallions comes up often in this form: "Why is a full blood stallion worth so much more money to breed from than grade, if the grade is a fine individual?" Now, in a nutshell, the individual superiority of the grade animal is an acquirement of his own and has not been fixed as yet into type; he may breed true and he may not. He is an individual and after all the sum of the environments of all his ancestry and when they have been smaller animals, if he is of the draft breeds, his offspring may revert to their type. The pure bred draft animal has at least five generations of weight behind him, and the foal, if it has a reasonable amount of care is sure to inherit size from half of its ancestry. As the pure blood in its veins, if given a chance, is half of its inheritance, we may always be sure of a larger animal than its dam.

Study what is behind the stud animal; if breeding for speed, sum up the record speed of his ancestors and average them to see what he inherits. If a draft horse see what weight is behind him, then if he is an individual of health and strength and soundness, he is safe to use. In the draft stallions there are two pedigrees, one of a grade, the other of a pure breed, both ficticious — **RUFUS** (full blood). weight 1950; Sire, **Sir Clayton** (full blood), weight 1900; dam, Rosa, weight, 1600. **Roy** (grade), weight, 1900. Dam **Belle** (common mare), weight, 1200; sire, Blucher; weight, 1900; dam, Sallie; weight, 900.

Now the average weight of the six nearest ancestors of this horse figures 1575 pounds, so that while he might occasionally throw a foal that would be as heavy as himself, still he could not be expected to do better than make some general purpose horses, expressers and delivery wagon stock, a sort of misfit class.

Now, see what from a registered full blood we may reasonably hope to have:

FRANK (full blood); weight, 1900; sire, **Rufus**; weight, 1950; sire, Clayton; weight, 1900; dam, Rosa; weight, 1600. Dam, **Topsey**; weight, 1800; sire, Hubert; weight, 1900; dam, Fleate; weight, 1800.

An average of 1825 pounds per animal is the pedigree, or an average of more than 250 pounds in weight greater than the grade horse, and there are no light weight animals to revert to in the strain.

In cows, we also pay for the summed up value of the inheritance. If a bull is in the Advanced Registry he is worth more than though his inheritance were hit or miss. If his daughters have shown that they can make a required number of pounds of butter a week, the sire has a value above the common strains of the pure breed animals of his race. In the stallion the transmission of inheritance should be visibly true he should have the weight, appearance of his breed; a Percheron should be gray or black; a Clyde should be light bay or sorrel; a Belgian dark bay or brown. Do not patronize an off-color stallion. for if he is not from a sire prepotent enough to color him aright you do not have any assurance that he will transmit other breed characteristics. Now if you want bay offspring, breed to bay sires, but do not breed to a horse that has so little individuality that he has changed his own proper color and expect results.

The Cattle Association is fixed in regard to color. Though there are some times red and white Holsteins they never go into the herd book, nor do Herefords without a white face find entrance, no matter how well bred they may be. While the old saying is true that "a good horse may be any color," I have reversed that saying; it is "no good horse can have a bad color." Now the first is true of the animal as a worker, driver or pet, but all "off" when applied to breeding animals.

CREAM TROUBLES.

Editor Cultivator: I have a dairy of mixed cows, Jerseys, Shorthorns and Guernsey stock, and am having trouble in getting cream to raise. I know the milk is rich enough. We feed alfalfa, bran and corn meal. The milk is sold on milk route and customers complain that milk is not rich enough. Can you give me the cause and remedy?—E. S., Sierra Madre.

Increasing a cow's feed will not increase the richness of the milk. The increase of the butter received from the well-fed cow comes from increased flow, not increased per cent of butter fat in the milk. Test each cow separately with the Babcock test; there may be one or two cows giving two per cent milk in the lot, that reduces the entire output in butter fat. If you have not a Babcock tester, when the cows are milked, if each cow's milk is carefully stirred and poured from one bucket to another to thoroughly mix it, then take out half a tumbler full and set it in the glass in a cool place, when the cream rises you will be able to see the relative difference in the various cows' milk of the herd.

By considering four tablespoonsful as an ounce and then measuring the cream raised in proportion to the milk in the glass, by simple equation a weighing of the entire milk from that cow you can arrive at an idea as to which cows are giving too little cream in their milk.

Do all the customers complain? If they all do not, it may be that the milk is not well mixed in delivering it and some are receiving a skimmed portion while others are getting the top milk. See that it is well mixed if delivered in bottles before they are filled, or if it is taken from large cans stir it before removing each person's portion. Cream rises so quickly that there is a difference in two minutes time. The customer that receives the poor portion will let you know, while those receiving the richer portion will keep very quiet about it. So if only a portion complain this may be the cause.

I believe in a spade and an acre of good ground. Who so cuts a straight path to his own living by the help of God, in the sun and rain and sprouting grain, seems to me a universal working man. He solves the problem of life, not for one but for all men of sound body.—Emerson.

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Good pasture is the secret of hog raising.

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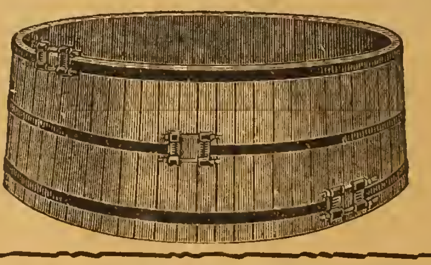

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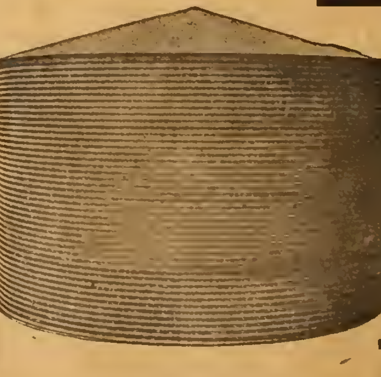

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The Lawrence-Williams Co., Cleveland, O.

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OF THE

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OF SOUTHERN CALIFORNIA

Organized for the general advancement of Jersey interests, to extend knowledge of their superior merits, for the mutual benefit of members, and to increase the profitableness of one of the State's greatest industries. Breeders are requested to unite with the Association.

BULL FOR SALE

Having sold my ranch I am forced to sell Golden of Biltmore. 60082, a grandson of Golden Lad's. Golden of Biltmore is one of the best, ***if not the best*** sire on the coast, several of his daughters less than two years old selling for over $200 each. Highest bidder for next sixty days takes him. If everything is not just as represented, I will give anyone the ***bull free of charge. I sell on merit.***

C. S. Burgess, Riverside, Cal.

Pure St. Lambert Bull

—ST. LAMBERT OF RAMONA, No. 62633,—

heads the Ramona Herd of Registered Jerseys of

Geo. W. Thomas. Riverside. Cal.

For Sale--Registered Jersey Bull Calves

About 6 months old, solid color animals and first-class in every particular. Out of as fine stock as can be found in this State. Tested dams. Detailed information on application. Address or call any afternoon.

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The Whiting Jersey Stock Farm Co.

Have moved their herd of Jerseys from San Bernardino, Cal., to the famous Imperial Valley, and hereafter their post office address will be Heber, San Diego Co., Cal., from which they will conduct all their business. Abundant green feed every day in the year will be of great advantage in the best development of our young stock.

Whiting Jersey Stock Farm Co., Heber, San Diego Co., Cal.

LEMONITA HERD

Leffingwell Rancho, Whittier, Cal.

Service bull "SARGENT FOX," 64833. Bred on the Island of Jersey. Sire, the great Flying Fox, that sold at auction for $7,500. Dam, Miss Sargent, reserve winner over Jersey; winner of seven first prizes and five championship cups. "One of the grandest cows the Island has ever produced."

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For Sale, yearling bull Ruth's Gordon King, No. 72360 A. J. C. C. He is of richest breeding on both sire and dam's sides. Also three richly bred heifer calves by Marigold's Exile King, from cows that are good yearly producers. For particulars write

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Oakhurst Jerseys

Sons of imported Golden Marquis out of prize winning and tested dams. for sale.

L. Bradbury Duarte, Cal.

Kings Victor King of St. Lambert

At head of herd. Young stock for sale.

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CARROTS FOR HORSES

A farmer and stock breeder advises the free use of carrots in stock feeding. "Carrots," he says, "are so seldom advised in relation to stock feeding that it might almost be thought they were of little or no value as a food for stock, whereas the opposite is the case. For horses, more particularly, carrots are highly beneficial. It has often puzzled me why carrots are not more grown and offered for sale. A comparatively small quantity are decidedly remunerative and in excess of all other roots, but for stock feeding they are hardly to be found. On some soils it would be a mistake to attempt carrots, but where the soil is pliable and deep no crop is more easily grown, and if a big supply was put in the market then disposal would be easy and prices good. For home use a heap of carrots is most acceptable, as all kinds of stock consume them greedily, with good results.

"Carrots are often looked on as a kind of delicate food for sick horses. If a horse is out of sorts and off its feed, refusing almost everything and eating with the greatest indifference, and carrots are offered, they are eaten at once with much appreciation. They help to restore the appetite and give condition to the horse. In these respects carrots are invaluable and may well be looked on as safe correctives, but their usefulness extends beyond the period of sickness and depression, and horses in health may receive them frequently as a good food to maintain condition and activity.

"When first given their effect is a little laxative, but that is desired in many cases, and once given regularly they act as qualifying food. They are an excellent food for itching horses and all in bad coat, as they are cooling to the blood and give a gloss to the hair. Horses of all ages may receive them, including even the youngest backward foals, or the oldest and frail. Carrots should not be looked on as a mere addition to other or ordinary foods, but substitutes for them, as they are quite capable of acting as a real food."

MILK AERATION.

It has hardly been safe to advise the proper method of handling bottled milk. I have been criticized severely for advising against milk aeration during the past years. People are, however, slowly coming to know that the so- called animal heat or animal odor is nothing more or less than animal manure liquified in the milk. I saw two sample of milk this winter produced by J. W. Shattuck of Norwich, N. Y.; one was put through the aeration and bottling process and the other was milked directly into the bottle; both cooled and kept for 11 days. The first mentioned was fit to use, but showed signs of decay. The non-aerated bottle was as perfect as though milked the night before. It has been a slow process to educate people to understand that air contaminates milk. Men who are producing certified milk have learned to keep the air in the stable as free from dust as possible and to protect the milk after it was milked from air contact unless in a room that had been made as nearly as possible free from germ life. Now the average aeration of milk is an abomination, because the air is laden with germ life, and the aerator is not half the time clean. The way to care for milk is to milk it as cleanly as possible protect it from the air and cool it as quickly as possible, and keep it cold. Don't however, try to cool a large body of milk without stirring it, and so have the mass partly cooled and partly warm. Stir it enough to have the whole body uniform.—H. E. Cook.

POINTS OF A GOOD DAIRY COW

L. A. Sweet, a very successful dairyman of Minnesota, addressed the annual meeting of the Minnesota State Agricultural Society a short time ago and related some facts gathered from his experience with dairy cattle. We quote in part from his address what we consider valuable experience:

"In the rearing and breeding of the dairy cow, several things in her individual make-up should be taken into consideration. In the first place her pedigree should be good, that is to say, her dam, her grand dam and her great grand dam and farther back if possible should be individuals of large performance, then she should be as near a perfect individual herself as possible; that is to say, she should have the ideal dairy form. What is the dairy form and how can it be improved?

"The cow with the ideal dairy form should be heavy in the middle, in other words, her digestive tract should be very large in proportion to the body. She should have a large pair of lungs, being wide on the chest and having a large nostril. These indicate that her breathing is full and deep, and the chances are, if she has a good large, sound pair of lungs, she will have a large, active heart, a large digestive tract to store away and digest a great amount of rough feed, a good strong heart to circulate a heavy flow of blood, and a large sound pair of lungs to purify the blood with, all working together in unison, with a large, well-developed udder for the accumulation and secretion of the milk. All are vital points. The udder is supplied for its milk secretion by a heavy flow of blood which is indicated by the milk veins and the size of the veins where it passes into the abdominal wall. The spare build of the cow, showing no surplus flesh to require an extra amount of feed for bodily maintenance, and the bright, prominent eye; also the soft, mellow skin and the thin hair, are all points that indicate the make-up of a good dairy cow."

STOMACH WORMS OF SHEEP.

It is during the summer months that loss from the twisted stomach worm of sheep occurs, and flock owners should early endeavor to prevent their flocks from becoming diseased. Healthy adult animals seldom become affected with this disease, and the greater part of the loss occurs among young and weak animals. However, if the conditions are favorable for the sheep to become infested with this parasite, the death rate among the mature animals is also heavy.

This disease is not as difficult to treat successfully, as is generally believed. The preventive treatment is very important. It is based on keeping the sheep in a healthy, vigorous condition, and among surroundings unfavorable for the entrance of the eggs or larvae of the parasite into the digestive tract or the feed. Drinking surface water and permanent pastures, especially if pastured close, are favorable for the production of the disease. The preventive measures that are most practical to use under the local conditions can be judged best by the person in charge of the flock, and the success of this part of the treatment will depend on the precautions that he deems necessary and the thoroughness with which they are carried out.

Sheep raisers, who have lost sheep from this cause in former years, should not wait until the disease develops in the flock before using medicinal treatment. The following mixture is recommended by Dr. Law, and has given excellent results; arsenious acid one dram, sulphate of iron five drams, powdered nux vomica two drams, powdered areca two ounces, common salt four ounces. This mixture is sufficient for 30 sheep and can be fed with ground feed once or twice a week. In case the symptoms are already manifested, it should be fed once a day for two or three weeks. In giving this remedy in the feed, the necessary precautions should be taken, or each animal may not get the proper dose. Turpentine is largely used in the treatment of stomach worms. It is administered as an emulsion with milk (one part turpentine to sixteen parts

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Cures the sick and acts as a preventive for others, and is given on the teeth and tongue. Safe for Brood Mares and Colts and all others. $1 00 per box, ½ doz. $5.00. Sold by druggists, or sent express paid.

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of milk). The emulsion should be well shaken before drenching the animal. The dose is two ounces for a lamb and four ounces for an adult, and to be effective should be repeated daily for two or thre days.—R. A. Craig, Veterinarian, Purdue University.

FALL FRESH COWS MOST PROFITABLE.

Much has been written upon the best season for cows to drop their calves. Opinions still differ, and by far the greater number of milch cows are allowed to follow the most natural course, and either by indifference or intention they "come in" in the spring. The producer of milk for sale, if he has an even trade, may want to have about an equal number of fresh cows every month in the year. If the bull is kept up and service controlled, this can be regulated as a rule, although unpleasant irregularities in breeding will sometimes occur and stubbornly resist correction. But if the prime object is to produce the greatest quantity of milk of the best quality and at the greatest profit from any given number of cows within a year, the evidence is overwhelming that the cows should be managed so as to calve in the autumn months. For like reasons, September is the best month, in most parts of the country, for a heifer to drop her first calf in order to best develop as a cow, and this almost regardless of the age of the animal at first calving. Calves born in the fall are easier reared and make better cows than those born in the spring or summer. It seems needless to rehearse the stock arguments on this subject, based upon the long experience of successful dairymen, but a brief recapitulation may be useful. The cow or heifer calving in the fall needs the most healthy and nutritious pasturage just following the strain and while coming into full flow. Just at the time when some falling off is likely to occur, the animal is brought to the stable and receives good care; the winter feeding and the returns from it may be depended upon to exceed the midsummer results for any like period. At the stage of milking and of gestation, when another dropping off in the milk yield may be looked for, the fresh pasturage induces a fresh flow, lengthens the milking season, and increases the year's total output. December and January are good months in which to control and supervise the service of the bull. Midsummer and the dog days are a good time for the cow to be dry and preparing to calve again, and a most unprofitable and annoying time to make milk or handle it. With fall fresh cows the greatest product and the richest comes at a season when milk and butter are always comparatively high in price. In actual practice four fall fresh cows have been found equal to five which calved in the spring, in twelve months' product, and at about four-fifths the cost.—Farmers' Bulletin No. 55, U. S. Department of Agriculture.

AUCTION

Thursday, June 7th, at 10 A. M.

Seymour L. Watts Will Sell at His Ranch at

Morton Station

On Santa Ana Electric Line,

54 Head Milk Cows

1 Holstein Bull

All fine big cows and milkers. Graded Holsteins, Durhams and Jerseys and in excellent condition; carefully selected herd for milking strains. Mr. Watts is going entirely out of the dairy business and will sell every head regardless of value.

TERMS—6 months time with approved security. Lunch served.

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Grand Auction

Friday, June 8th, 10 A. M. Sharp

At Raitt's Banner Dairy Farm, 2½ Miles South-West of

Santa Ana

Take Santa Ana electric cars to Fifth street crossing, Santa Ana. Teams in waiting.

200 Cows 15 Horses

This Herd consists of 100 head of Jerseys, 100 head of Holsteins and Durhams. 165 head of these cows are now milking, balance coming in soon. All large milkers and test high. Healthy and in good condition; in fact, one of the largest and best herds in Southern California, the result of 10 years of careful breeding and culling. A certificate of health will be furnished, so that this stock can be removed from the county if desired. Owner invites prospective purchasers to call at the ranch and see these cows milked and tested before sale.

2 Registered Jersey Bulls, 1 Durham Bull, 2 Holstein Bulls.

15 head of Work Horses and Mares, weighing from 1000 to 1500 lbs. each, from 4 to 10 years, all general purpose stock.

Implements—Milk Wagons, Plows, Harrows, Seeders, Corn Planters, etc.

Barbeque at noon.

TERMS 8 months time will be given with note and approved security. Three per cent discount for cash.

On account of quitting the dairy business, I am making a genuine closing-out sale, and will absolutely sell everything to the highest bidder; no reserve.

J. T. RAITT, Owner

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DIGESTIBILITY OF MILK.

The Minnesota Agricultural Experiment Station in experiments on The Digestibility and Nutritive Value of Cottage Cheese, Rice, Peas and Bacon, St. Anthony Park, Minn.

The experiments taken as a group show:

That cottage cheese prepared from skim milk and enriched with cream is a cheap, digestible and nutritious food, and when the materials for its preparation are produced on the farm it is one of the most economical foods that can be used. At two cents per quart for skim milk and 35 cents per quart for cream cottage cheese compares favorably with meats at 11 cents per pound.

The actual digestibility of rations in which milk is used is higher than the calculated digestibility of the individual foods, showing that, when combined with other foods, milk exerts a favorable influence upon digestibility.

That lean bacon in a ration supplies a large amount of digestible nutrients and available energy. Over 96 per cent of the bacon fat was digested and absorbed by the body. Lean bacon contains as much protein and about twice as much digestible fat as other meats, making it the same and even at a higher price per pound a cheaper food than other meats.

JUST WARTS.

Editor Cultivator:—In your paper of May 18, 1906, there is a question in regard to warts on cows and a remedy was given. But I have tried another remedy which seems to me easier. We have a heifer which had warts on her ears last year. We rubbed on fresh lard on the warts a couple of times and in about two months or so, the warts dropped off.—Subscriber Kingsburg.

Veterinary Instruments. Black Leg and Anthrax Cure. Milk Fever Outfits. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

Profit in the Poultry Yard

BY MRS. A. BASLEY, HOLLYWOOD, CAL.

INTERROGATE NATURE.

It is nice to be home again! But I do enjoy the Farmers' Institutes, there is so much to learn at them from all the topics discussed there. It is so wonderful too, to compare the treatment of the soil, the crops, the cows, in fact, everything to the treatment of fowls! Wonderful to learn that even the soil has to be fed "balanced rations" as a "chicken crank" might call it, or as Mr. Mills asserted, you cannot keep on taking a crop off the land without returning an equivalent. "Allee samee" with the hens, you must feed them the elements of the egg if you want them to bear fruit in eggs.

Then the "cowman" Professor E. W. Major's discourse on the varieties of cows, and of the difference in handling the different breeds is most helpful to the chicken crank, for hens with their different breeds require similar care in handling.

The question "Is a cross between a Jersey and a Holstein likely to prove good?" comes at almost every Institute. This brings the Professor to his feet and with inimitable patience, he explains the difference in the milk of the two breeds, the Jersey giving a small quantity of very rich milk, the Holstein a very large quantity but not nearly such rich milk. The object of a cross would doubtless be to endeavor to get a cow with the good qualities of both breeds, but unfortunately this does not always result, in fact it more frequently happens that the bad qualities of each side predominate, that is the cross gives as little milk as a Jersey and of as poor a quality as a Holstein. To take two breeds of cows, horses, pigs, hens that have been bred for generations for special purposes, fed in a special manner, and cross them, unless for the purpose of creating a new breed, which will take money, patience and many years or even generations to perfect, seems a foolish and useless undertaking. "Allee samee" with hens!

But to return to our subject of interrogations, some of the questions asked and discussed bring out new ideas which are very helpful to the farmers and are one of the salient points of the Institute.

I think in the fourteen institutes I have attended during this year at least two hundred questions have been "fired" at me, I really feel as if I am fairly wrestling with interrogation points.

In these two hundred (roughly estimated) questions, more than half have to do with the raising of little chicks and what causes the great mortality among them.

I have frequently written about the causes of mortality in little chicks, especially in brooder chicks, and have noted with sorrow what a serious loss this is to poultry breeders all over the country. Now there must be some

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BUYS THE WORLD'S FAMOUS
EGG FOOD NO. 4

MIDLAND

IF YOU WANT EGGS
YOU WILL FEED NO OTHER

Used by all the largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the GOLD MEDAL at the St. Louis World's Fair for greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1604.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A. FILCHER, Commissioner.

And Now Comes New Reward for Merit:

Read the following telegram received from the Lewis & Clark Exposition at Portland:

"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

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PETALUMA INCUBATOR CO.

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200 Eggs a YEAR From One Hen

CAN YOU show this record? How many possible eggs have you lost—eggs which you might have had—if you had been using a feed which had been tested for you.

A Feed which makes a 200 egg Hen out of a Scrub, and makes a 200 egg Hen lay 225 to 250 eggs a year. Figure it out.

How can you afford to make expensive personal tests, when

PURINA POULTRY FEEDS

will bring out every egg your hens are capable of laying. A feed which will bring EGGS in Winter as well as in Summer—40c Eggs as well as 12c Eggs—from ALL your hens.

And you don't have to take our word for it, either—just try PURINA FEED at our expense, and believe the evidence of your own senses—that's all. It won't cost you a red cent to prove us right or wrong.

If the results don't come, just tie up the bag and write us, and we will return every penny of your money and tell you what to do with the unused feed. You are not out a cent in making the trial, for we will supply you through your dealer or direct FREIGHT PREPAID and the feed used in testing costs you nothing. This is the Money Back Line—Write today for particulars about our FREE TEST Plan.

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PURINA POULTRY FEED

FEATHERLY FARM ORPINGTONS

Eggs from my prize pens reduced one-half price for balance of season, except best Buff pen.

P. L. HARLEY, BOX C, REDLANDS, CAL.

Buff Wyandottes

Eggs from pens mated with 2nd prize Cockerel or 2nd prize Pen L. A. Show, $2.50 per 15. Stock and yards at San Gabriel. **Wm. J. Bodger, 251 S. Main St., Los Angeles, Cal.**

WHITE MINORCA EGGS

Best of Stock. Great Layers.
$1.50 setting, $8 100, $65 1000.
S. W. MORGAN,
Sunnyside, San Diego Co., Cal.

Mountain View Poultry Ranch

S. C. White Leghorns—Heavy layers. Eggs, $1.50 per 15, $5.00 per 100.

Indian Runner Ducks—Males for sale. Eggs, $1.00 per 13, $3.00 per 50, $5.00 per 100.

Mrs. J. L. Updyke - Fullerton, Cal.
Successor to Jacob Kreger

Fairview Poultry Yards

Special offer of breeding stock. To make room for young stock I offer two pens of my select White Rock breeders, each consisting of 6 fine 2-year-old hens and a splendid yearling male, at $12 for the pen. Or, if preferred, will sell one pen of 6 extra good yearling hens with vigorous 2-year-old cock at same price. These birds will please you.

A. E. NELSON EL MONTE, CAL.

New Hatchery
Baby Chicks

White Leghorns, 10c each. Large orders a specialty. Eggs from fine, large thoroughbred stock. Terms cash. Order now.

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Home Phone 5184

Get More Money for Your Eggs

TRADE HAGER'S WINTER HEN MARK
KEEPS FRESH EGGS FRESH

Hager's Egg Preservative is unquestionably the only one on the market that will keep *fresh* eggs *fresh*. It costs *only one cent per dozen*, sold on a strict guarantee to do as claimed or money refunded.

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Hager's Egg Preservative Co.
St. Louis, Mo.

cause or reasons for this, what shall we do about it ? I think it was that wise man Lord Bacon, who said, "When in doubt consult Nature." Nature is our great and wonderful teacher, suppose we interrogate Nature on this important subject, and see what she advises, or does.

To begin with we will confess that the nearer we can come to Nature and the closer we can imitate her the greater will be our success in raising chicks.

First, when does Nature hatch and raise her young fowls and birds? In the spring or early summer! Well, we do not want to hatch only at one season of the year, what then must we do? Duplicate the conditions of springtime, as closely as possible.

First, as to food. Now this is very important. What food does Nature supply for her young fowls in the spring and how can we most closely imitate her food, if we cannot supply it exactly? Does she give them grains of corn and wheat? Where are her grains? Nearly all buried! Nearly all sprouting! So she gives her chicks the tender green, that they have in abundance all around them everywhere. What else? Grubs, worms, insects, ants eggs, and larvae of all sorts. These they have to hunt for, and if they scratch and work for them they get them, but they have to run and scratch, they cannot gobble a full meal in ten minutes and then have the remainder removed. Now we can supply the green food if we try, and I notice that those who give their chicks all the tender, spring-like green food that they can eat are the people that are called "lucky" with chicks, their chicks are healthy and vigorous, and do not fall victims to the ills that chickens are heir to.

UPPER.—Black Orpington Cockerel, 1st prize at San Francisco; and Black Orpington pullet, 1st prize at San Francisco and Los Angeles.

LOWER.—Buff Orpington cock, 1st prize at San Francisco.

Bred and owned by Percy L. Harley, Redlands, Cal.

"Be sure you remember to show me the place if you see an ants nest," said the gamekeeper's wife to me when I was a child, "I want their eggs for the little pheasants."

"I have found an ant's nest and the ants are airing their eggs!" was my delighted announcement soon after, and I vividly remember going with the good woman to gather ant eggs to feed the baby pheasants, and my surprise at the ants airing their eggs. I was told later on that the wise ants knew the children in the eggs needed fresh air to make them hatch, another thing in which we would do well to copy Nature.

Of course we cannot supply enough ant eggs to feed a brooder of chicks, nor could we find grubs and worms enough, we must supply it artificially, and we must use our own brains to supply it. We can always fall back upon the Poultry Supply House for the dried blood, beef scraps, animal meal or the new granulated milk, or we can give them cooked or raw meat and eggs, best of all milk to drink.

Nature never gives cooked food or mashes and anyone who has tried Nature's plan of a variety of grains, such as we find in chicks feeds, with milk to drink and lots and lots of crisp green food, will never return to mashes and will be one of the "lucky" people who aways succeed.

Another thing Nature supplies in the spring time is pure water, the brooks and streams are full, there are raindrops and dewdrops on leaves and grass. How often I have seen the partridges and pheasants sipping from those diamond drops. How different to the stale, warm, dirty water of many a brooder, where the owner attributes the diarrhoea and death rate to a chill or over heating on his usual "bad luck."

We cannot have running water in our brooders, but we can supply clean water two, three, or half a dozen times a day. Water is cheap, try keeping the water supply clean, and cool and frequently changed. I assure you it will greatly diminish the mortality.

Another thing Nature supplies and that is fresh air. The smell in some of the brooders and even in the brooder houses is enough to cause mortality, without the poor food and dirty water. The wonder is to me that any chickens live in some brooders.

Open up the brooders, air them, sun the hovers every sunny day and keep them as clean as the ground in the wild woods, and if ever you are in doubt "Interrogate Nature."

A bob-tailed pullet on a rickety hen-roost is a sure indication that there is no money in poultry.

EDITOR'S QUESTION BOX.

Worms. (F. C. F., Tropico). Will you suggest the cause and cure of worms in my White Rock hens? Several have them and one died from their effect.

I feed them Coulson's egg food and bran in the morning and rolled barley and whole wheat at night. Plenty of good water, clean coops and grounds, green food and no crowding, some lice but no mites.

I have found worms as large as darning needles in some of their droppings, these soon die and dry up on exposure to air. They are white and pointed at both ends. I bought the hens of a prominent dealer and fancier in Los Angeles who makes a specialty of the breed.

Any suggestions that you may make will be appreciated.—New Subscriber.

Answer. The cause: The hens are picking up and eating the worms or worm eggs from the droppings of other fowls or each other. I lost a large number of young chicks from some of the neighbor's pigeons which would trespass into my yards. I saw the worms in the droppings. Pigeons are great disease carriers, bringing in roup, canker, chicken-pox, mites, lice, worms, etc.

Cure: There are several different cures but the one I found most effective with mature hens is let them fast for from twelve to twenty-four hours then give each a teaspoonful of turpentine in a teaspoonful of castor oil. Put half a teaspoonful of turpentine in a quart of water and give them no other water for a week. This will always kill the worms that you describe. Meanwhile spade over your yards, being careful to turn under the top of the soil and plant a crop of barley or wheat on it.

I sprayed my brooder corrals with the kerosene emulsion then sprinkled them over with air-slaked lime, dug that in and then raked in a crop of barley, and within a week I stopped the mischief.

With little chicks thirty drops of turpentine in a pint of drinking water for a week will cure them. Adult fowls require a stronger dose.

For tape worm, let the hen fast twenty-four hours, then give her ten drops of tincture of male fern in a little water and follow with a dose of castor oil.

* * *

Water-glass. (S. R., Anaheim). Please tell me what proportion of water to use for keeping eggs.

Answer: One part of silicate of soda to ten parts of water that has been boiled.

Buff Orpington and Barred Rock Eggs
for hatching from pure bred stock at $1.00 per 14.
Mrs. Albert Miller,
Tel. East 1767. Station A, Los Angeles, Cal.

Blue Andalusian Eggs

$1.50 for 15, $6.00 per 100. Free range. I raised and sold cockerel winning first prize at late L. A. poultry show. Stock. **Mrs. J. S. Duff, 3145 S. Hoover St., Los Angeles, Cal.**

200-250 Egg Fowls | WHITE WYANDOTTES | 16 Prizes San Francisco

"Cream of the Coast," unequalled as egg producers. Vigor of stock, fertility of eggs and show record unsurpassed. Splendid testimonials from patrons. Bargains in stock and eggs. Catalogue.

Capitol Avenue Poultry Farm, A. L. R. Mantz, Rural 21, Box 98K, San Jose, Cal.

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A. C. W. Poultry Food
Made in Los Angeles

EGG FOOD A·C·W IT FILLS THE BILL

Costs no more than any other goods and we know there are none better. We want your business not only because our goods are **made in Los Angeles** but because A. C. W. products are better than stock made by concerns at a distance who are not familiar with local conditions—our rainless summers and snowless winters. We make the A. C. W. products to fit conditiins **here,** climatic and otherwise, therefore it is not altogether sentiment that should make you give preference to the A. C. W. goods. **Made in Los Angeles** by the

Agricultural Chemical Works
Manufacturer of Poultry Foods

Office and Factory:
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Established in 1893

Blue Andalusians
At Los Angeles, 1906, our strain in a class of 68 Andalusians with 16 birds won more firsts than all our competitors combined. Eggs, $1.50 and $2.00 per 14.
Blue Ridge Poultry Yards. 128 Avenue 32 Los Angeles

SHADE'S Rhode Island . . . Red Farm
Automatic Chicken Feeders.
Shade's Egg Food sold to consumers only.
San Bernardino, - - California.

S.C. White Leghorns Indian Runner Ducks
Eggs, $1 per setting, or $5 per 100. Leghorns of McFarlane strain Fertility high, 80% guaranteed. ***J. E. Beadle, 901 No. St. Louis St., Los Angeles.***

RED HEN RANCH
Eggs for sale from Prize Winning **Rhode Island Reds.** Send for circular. **W. Frank Greenleaf, Santa Ana, or 404 H. W. Hellman Building, Los Angeles, Cal.**

Single Comb White Leghorns and Indian Runner Ducks
Eggs, $1.50 per setting. $6.00 per 100. Send for illustrated catalogue.
John P. Boden, 636 Second St., Watsonville, Cal.

Blue Andalusians
From prize winning and egg producing strains. Eggs, $1.50 and $2.00 per 15; incubator lots, $6.50 per hundred.
C. E. Chittick, 124 Avenue 34, Los Angeles, Cal.

Brown and White Leghorns
Prize winners at L. A. Show, '06. Eggs from good laying strains. Eggs, special matings, per 15, $2.00. Incubator lots, $6.00 per 100.
Hemet Poultry Yards, Hemet, Cal.

BUFF LEGHORNS
Eggs for hatching from the famous J. W. Miller strain, Freeport, Ill. $1.25 per 15
CHAS. G. MILLER, 40 Elm St. WATSONVILLE, CAL

White Wyandottes and S.C. White Leghorns
Good layers. Trap nests used, Eggs: Wyandottes $1.50 to 2.50 per 15. Leghorns $1.50 per 15.
J. F. GOETTING, EL CASCO, CAL.

White Wyandottes.
High scoring stay white birds. 1st Cock L. A. 1906 show and other winners. Eggs $1.50 to $3. per 13. $10.00 per 100. Mount Holly Poultry Yards, Hollywood, Cal. E. W. Preston, Prop., Sunset, Hollywood, 901.

White and Buff Wyandottes
Prize-Winning, Egg-Laying, Wealth-Producing Strain.
M. E. DILLINGHAM, Bx67 San Gabriel, Cal.

THOROUGHBRED YOUNG CHICKS
White Leghorns, 10c.
White Ply. Rocks, 12½c.
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BRONZE TURKEYS
Hart's strain. Winners of five firsts at Los Angeles Show, '06, and always winners wherever exhibited. Write for prices.
Ed. Hart. Clements, Cal.

WILLARD POULTRY FARM, HYNES, CAL.
Mrs. F. T. Hungerford, Manager
14 Ribbons at The Last Los Angeles Show.
Indian Runner Ducks' Eggs:—$1.00 per 13, $3.00 per 50, $5.00 per 100. White Minorca and White Wyandotte eggs:—$1.50 per 15, $4.00 per 50, $8.00 per 100. Eggs carefully packed and shipped any where.

EGGS FOR HATCHING
from a heavy-laying strain of
SINGLE COMB WHITE LEGHORNS
I guarantee 100% fertile. Write for prices.
Golden State Poultry Yards, Lordsburg, Cal,
T. E. Mills, Prop. Home Phone 1720

SONOMA-AMERICAN INCUBATOR
Send for large circular fully describing these machines.
Sonoma-American Incubator Co., - Petaluma, Cal.

BARRED ROCKS
EXCLUSIVELY
Send for Sixteen-Page 1906 Catalogue
H. R. CAMPBELL
BOX O PETALUMA, CAL.

Single Comb Brown Leghorns
Exclusively
Stock for sale and eggs for hatching. Eggs from first pen $2.00 per 15 eggs, second pen $1.50 per 15. Incubator lots for $6.00 per 100 eggs. They have always won first prize whenever shown. Large birds and heavy layers.
W. E. Mercer - - Ventura, Cal,

The Breed for Profit The Breed for Beauty
THE NEW AND POPULAR
Columbian Wyandotte
Eggs $2.50 per setting for balance of season
A few trios at reasonable prices.
ED. M. BURNELL
Box 265 South Pasadena, Cal.

CARE OF DUCKLINGS.

The incubating of ducks' eggs is not different from hatching of hens' eggs, but the care of young ducks is radically different in many respects from that required for chicks. Unlike chicks, the ducklings must be removed from the incubator very soon after the hatch is complete and the young ones dried off. The heat of the brooder after the ducks are in should be little less than that of the nursery in the incubator from which they are taken. This rules from 95 to 100 degrees, and should be continued for twenty-four hours, during which the ducks should be kept under cover most of the time.

The first feed should be given when they have been in the brooder a few hours and nothing is better than stale bread moistened with skim milk, in which is sprinkled a little coarse sand or fine grit. It should be fed on shallow tin plates which are easily cleaned and frequently scalded. After the first day food should be offered four or five times a day and any not eaten promptly removed . If a sufficient quantity is available the bread and milk diet should be continued for two or three days, when wheat bran and cornmeal in the proportion of two part bran to one of meal may be added, gradually increasing the quantity from one-third at beginning to three-quarters at the end of the week. A proportion of one-quarter bread may be continued with advantage, and the sand or grit should be 5 per cent. of the whole from this period on. Powdered charcoal sufficient to make it pretty black may be sprinkled in the food once each day, and granulated charcoal and grit need to be within reach of the young ducks constantly.

Water with the chill taken off should be within reach. Ducks must have water even though they spend their spare time in distributing the contents of their drink dish over the surface of the pen, creating a disturbance decidedly detrimental to their well being. To avoid this it is sometimes advisable to remove the water after after each meal, a fresh supply being provided for the next.

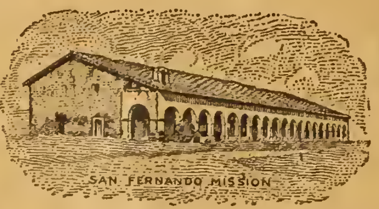
If the beginning of th second week finds the ducklings strong and full of life it augurs well for a fast and steady growth to killing time and maturity. The rotation and manner of feeding may remain unchanged, but the youngsters must have more exercise, part of which should be in the open air and on grass when convenient.

Green food should be provided from this time forward. If early in the season, chopped cabbage or mangel wurzels may be fed separately, or steamed cut clover from which the strong stems have been removed may be fed in the mash, making 20 per cent. of the whole. But when green grass or clover can be obtained it is much to be preferred and should be gathered, cut fine and fed in the morning while the dew is on.

Animal food is needed after the first week. Beef scraps are most in favor for this purpose on account of its availibility and keeping qualities. It should be sifted for the young ducks until they are three weeks old and may be increased in quantity from 5 per cent. of the mash during the second week to 10 or 12 per cent. at the end of three weeks.

This ration will give good results until it is time to fatten the birds for market.—Reliable Poultry Journal.

$1500
For the above sum, Captain Mitchell of Santa Barbara will sell his poultry business and good will. The outfit consists of 1000 Standard Bred S. C. White Leghorn laying hens and pullets and their fixtures, i. e., Brooders, houses. Posts, 6 foot "Union Lock" Fence Wire, Etc., Etc.
Sales of eggs for hatching average 14,000 per year at $70 per 1000, and the net income per annum for the last four years has been from $1000 to $1500. For further particulars apply to
Captain Mitchell, Rural No. 1, Santa Barbara



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WHITE WYANDOTTES
Stock For Sale, $1.50 and Up. Prize Winning Strain
MRS. C. D. HUBBARD, BOX 282, SAN FERNANDO, CAL.

Beef Scraps **Raw Bone**

GUARANTEED ANALYSIS:		GUARANTEED ANALYSIS:	
Protein	65%	**Protein**	25%
Fat	8%	**Phosphates**	45%

Made of Cooked and Dried Livers, Lungs, Melts and Clean Scraps. No fertilizer ingredients in **these** Beef Scraps.

Made of Clean Beef Bones, surplus fat removed. Cleanest Raw Bone on the Market.

Pure, Clean Animal Matter Poultry Foods
WESTERN MEAT COMPANY SOUTH SAN FRANCISCO CALIFORNIA

Dean's Pacific is an Incubator built on scientific plans and has all the latest improvements. Every machine guaranteed. "Facts From Experience" and Catalog for the asking. Address ***Dean's Place, 2509 Central Avenue, Los Angeles.***

Emery's Pure Meat Meal
Ask your nearest dealer for them and take no imitations
Don't believe all we say, but just enough to buy our Poultry Foods
Emery's "B. B. & B."
THE PACIFIC GUANO & FERTILIZER CO. Successors to N.Ohlandt & Co San Francisco, Cal.

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Complete with Instructions, $2.50, Postpaid
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West Coast Chick Feed
A perfectly balanced ration for the growing chicks. All pure food, no filler, no waste, hence cheapest. Keeps them growing and healthy. Made by
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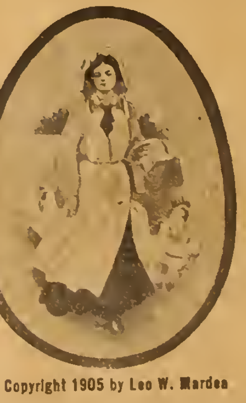

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MARDEN EGG FARM
HYNES, CALIFORNIA
Breeders of S. C. White Leghorns Exclusively
Fine Feathers alone do not make the profitable hen. Our fowls have the reputation of being ***extra large, handsome*** and ***extra heavy layers.*** Last season, our eggs averaged over 95 per cent. fertile. ***Remember***—In getting eggs from us, you do not get them from the general runs. We have but one grade of eggs to sell for hatching and those are from our breeding pen composed of only the choicest fowls, selected from hundreds that are ***bred to lay.*** Hens that approach the ***200 egg record.***
Price of Eggs—$1.50 per 15, $5 per 100. ***Send for Illustrated Catalogue. Address,***
LEO. W. MARDEN, Manager

CHOOSING THE HEAD OF THE FLOCK.

While it may seem to be a little early to discuss the bird that is to head the flock during another season, the farmer poultryman must rely on his eggs for breeding purposes from the birds who produce the market eggs and whether the male is kept with the hens during hot weather or not (it is better not) he should be selected early so that he may be trained in the way he should go. Here are a few of the faults which should be sought for in selecting a male for the pen for breeding stock. Discard a male with a pale face and comb or if he shows any weakness of legs or is run down. He should be proud and steady, he should be broad of back and there should be no nostril discharges. If a bird is selected with these points in view, not all the good or the bad points by any means, but most of the essential ones, the eggs will be strong and healthy. Once a good male is secured he must be well fed whether by himself or running with the hens, and care must be taken, in the latter case, to see that he has enough even it is necessary to take him away by himself, for feeding when running with the hens. Old breeders say that the male is one-half the value of the pen and this being the case he requires the best of attention.

USES OF CHICKEN FEATHERS.

One turkey supplies more different grades of feathers than a season's receipt of turkeys show different grades of turkeys, and although 5 cents a pound covers the range of difference in value of the toughest old tom turkeys and the plumpest young hen, the feathers sell at 5 cents a pound for the body feathers up to 40 cents a pounds for the fine tail feathers, says the Indianapolis News.

Local poultry men sort out six to eight grades of turkey feathers and the buyers make even more assortments, the feathers being used for as many different purposes. The small body feathers, which are used for pillows and feather beds, are worth about 5 cents a pound for common mixed. White feathers are worth more according to grade, bringing generally about three times the price paid for mixed feathers.

The fine tail feathers used for dusters are kept separate and sell for about 40 cents a pound and the "skirt" feathers are worth nearly as much. The wing and "point" feathers are also carefully saved and sold to manufacturers of featherbone and other substitutes for whalebone, and the larger ones find their way to milliners, after being made over, cleaned and dyed. Some of the small feathers are made up into artificial bird breasts and tails that adorn countless bonnets. They may cause the bonnet owners a twinge of conscience for wearing such a beautiful bird, when, in reality, they are wearing a bunch of cleverly arranged chicken or turkey feathers.

Duck feathers are worth about 35 cents a pound and goose feathers range from 60 cents a pound for white to 50 cents for mixed. Dealers say the principal reason that goose and duck feathers are worth more than the finest turkey and chicken feathers is that aside from being fluffier, there is an absence of odor to them that cannot be overcome entirely in chicken and turkey feathers. The reason that white chciken and turkev feathers are worth more than mixed, however, is that they are available for mixing with the better grades for pillows.

Most of the chicken feathers go in the 5 to 10 cents a pound class, to be used for cheap feather beds and pillows, the white feather being saved separate and bringing a good premium over the mixed grades. Fine tail and wing feathers are saved separate, selling as high as 40 cents.

Feathers shipped from this market are packed in bales of 200 pounds or in six-foot sacks. The tail and wing feathers are usually packed in boxes and sometimes tied in neat bundles.

Five chickens will give a pound of feathers, and with Indianapolis firms killing 2000 to 3000 chickens a day for home consumption and shipment, this market has nearly two tons of feathers a week to sell. A week's output can be packed in twenty bales, 4 by 5 by 3 feet each, but if the feathers were loose they would fill a house.

A single carload of feathers shipped to Cincinnati contained about six tons. They cost the shipper more than $1600 Cincinnati and Chicago are good buyers of all grades of feathers, most of the local shipments going to those cities.

WHAT A HEN DID.

Buying a hen for 50 cents, setting her on 13 eggs and getting 11 healthy chicks, and she commencing to lay long before weaning her babies, and shelling out four dozen eggs before the end of the summer. That's going some for a "measly" hen, isn't it? There are thousands of others just like her and, yet, there are many persons who say there is no profit in poultry. Let's take another look at the afore-mentioned hen. Her first cost is 50 cents. We'll say her feed cost $1 for a full year. Total, $1.50. Now, we'll allow $1.50 for the setting of eggs. The total is now $3. Eleven chicks hatched and eight of them raised to maturity when they are worth at least $1 each or a total of $8. The four dozen eggs are valued at 80 cents or $1. The hen has returned $9 for that $3, and she has several months still to her credit before the end of the year in which to make the egg basket a little fuller.

KILLED BY THE FUMES.

You must kill the lice on the fowls some way. If you don't care to handle them singly, use our liquid

PRUSSIAN LICE KILLER.

Simply paint the roosts and drop boards with it. The fumes arise and kill the lice on fowl and pen. It catches them all to the last mite, and it takes the nit as soon as it comes to life. The fumes do the work. It is the perfect, easy method of protection and cure. But if you like the powder treatment better, don't forget the old reliable **Prussian Lice Powder.**

Enclosed please find 40 cents for another can of lice powder. We were well pleased with the first can, but we need and must have more.—H. F. Lake, Yankton, S. D.

Prices: Lice Killer, 50c and $1.00; 5 gallon can, $4.00. Lice Powder, 25c; by mail 40c. Remember also our famous **Prussian Poultry Food.** Get either of these from your dealer. If you don't find them write us at once. We will supply you and send you also our 68-page book.

Prussian Remedy Co., St. Paul, Minn. Special Agents: Chas. H. Lilly Co., Seattle, Portland, San Francisco; Chas. Winsel, Los Angsles; J. S. Pollock, Pittsburg; Eltmiller Bros., Baltimore; Vaughan Seed Store, Chicago; J. W. Wilder & Co, Cincinnati, Ohio.

Poultry and Eggs Wanted

This sign you will see hanging outside of a merchant's store in nearly every town on the coast and it, in a measure, must convince you that there is money in the poultry business, and the

SIX MONTHS TRIAL

Chatham Incubators

will assist you in making money. Any responsible person can get a genuine **Chatham** and have SIX NONTHS TO PAY FOR IT—what is the use of you paying out money for an Incubator when you can make it pay over and over again for itself?

I can give you hundreds of testimonials from customers all over the Coast who purchased Chatham Incubators and Brooders last season on our ON TIME PLAN, and are thoroughly satisfied with them. The manufacturers fully guarantee every machine. Write me for our catalogue and some useful hints on poultry raising—it will be mailed to you free.

Geo. W. Foott, Box 2040, Portland, Ore.

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Excelsior Egg Food

Is an Egg Producer and a Money Maker. It keeps poultry in most healthy condition.

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Is balanced exactly right to make Chicks grow and thrive. It will raise 98% of your chicks. Give it a trial with your next brood.

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EXCELSIOR

None Others So Good

No others "just the same." Insist on **Excelsior** or write to us direct. Mention Cultivator.

Del Monte Milling Co.

242 Central Ave.,
Los Angeles, Cal.

Chamberlain's Perfect Chick Feed

"Nothing Just as Good"

World's Chick Feed of To-Day. The only original **Dry Chick Feed.** All others are worthless imitations. **Chamberlain's Perfect Chick Feed** was used exclusively at the great St. Louis World's Fair during the 7 months. This the highest compliment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.

CHAMBERLAIN'S PERFECT MASH EGG FEED,
THE WORLD'S GREATEST EGG PRODUCER.

"Nothing Just as Good"

GERMAIN SEED CO.,

Pacific Coast Agents. **LOS ANGELES, CALA,**

SPECIAL PRICES ON TON LOTS.

Distributing Agents: FREDERICK BROWN, San Jose; CHAS. H. NEARPASS, San Diego; CHANNEL COMMERCIAL CO., Santa Barbara and Ventura.

THE DRAFT OF PLOWS.

The following question was sent to the Country Gentleman: "What is the approximate pull in pounds required to move an ordinary plow 2½ miles per hour when turning a furrow 14 inches wide by 7 deep in clay gravel sod, on level ground with the ordinary amount of stone? How much would the resistance be increased on a 30 per cent grade?"

It was answered thus fully by Prof. F. H. King.

"There are so many factors which influence the draft of a plow that only a general answer can be given. The draft of a sod plow depends on the character of the sod, the shape of the plow, and the moisture conditions of the soil at the time it is plowed, as well as on the character of the soil and the dimensions of the furrow. In the following table there are given the average draft of plows for soil in good moisture condition, of the medium clay type, in the condition of stubble, for different dimensions of furrows, and with the medium stubble shape of mold-board. This table has been constructed from a careful consideration of all available draft trials of plows made in England and in this country, and is intended to represent the fact for the best present-day plows when well handled in soil in good stubble condition:

Width, inches.	Depth of furrow—inches.								
	4	5	6	7	8	9	10	11	12
9.....	176	205	233	261	289	317	345	374	402
10.....	203	235	266	296	329	360	392	423	454
11.....	230	265	299	332	369	403	438	473	507
12.....	257	295	332	367	408	446	484	522	560
13.....	283	325	366	402	448	489	530	571	613
14.....	310	355	399	438	488	532	577	621	665
15.....	337	385	432	473	527	575	623	670	718
16.....	364	415	465	509	567	618	669	720	771
17.....	391	445	499	544	607	661	715	769	823
18.....	417	475	532	579	647	704	761	819	876

In this table the figures represent the total draft in pounds which a team would have to exert steadily when drawing the plow forward through the soil; thus a 14-inch plow cutting a furrow 14 inches wide and 7 inches deep will require an average pull of 438 pounds, and this pull, when the team is walking at the moderate rate of 2½ miles per hour, represents 2.92 horsepower. In the next table there are given the number of the horsepower required to cut each size of furrow (width being given in inches in first column) when the total draft is that given in the last table and when the plow is drawn forward at the rate of 2½ miles per hour:

	Depth of furrow inches.								
	4	5	6	7	8	9	10	11	12
9	1.18	1.36	1.55	1.74	1.93	2.12	2.30	2.49	2.68
10	1.35	1.56	1.78	1.96	2.19	2.40	2.61	2.82	3.03
11	1.53	1.76	1.99	2.21	2.46	2.69	2.92	3.15	3.38
12	1.71	1.96	2.22	2.45	2.72	2.97	3.23	3.48	3.73
13	1.89	2.17	2.44	2.68	2.99	3.26	3.53	3.81	4.08
14	2.07	2.36	2.66	2.92	3.25	3.55	3.84	4.14	4.43
15	2.25	2.56	2.88	3.15	3.52	3.83	4.15	4.47	4.79
16	2.42	2.76	3.10	3.39	3.78	4.12	4.46	4.80	5.14
17	2.60	2.96	3.33	3.63	4.04	4.41	4.77	5.13	5.49
18	2.78	3.16	3.55	3.86	4.31	4.69	5.08	5.46	5.84

It may appear strange that it requires less than 500 pounds steady pull to cut a 14 by 7-inch furrow and that this work represents the work of nearly three horsepower. The matter will be made more evident when it is understood that it requires but about 150 pounds to pull a ton on an ordinary level road when on the wagon. The 438 pounds of pull will draw two tons on a wagon weighing 1800 pounds over an ordinary level earth road.

There is a very appreciably heavier draft on sod ground over that on stubble ground in the same condition of moisture. On a clover sod of the second year in a good condition of moisture and with the prairie-breaking type of plow, the draft of a 14 by 7 inch furrow was 440 pounds, without the coulter. On the same sod a little later, when the soil had become too dry, the draft was 1058 pounds. Using the stubble plow side by side with the breaking-plow when the soil was in good moisture, the draft for the same furrow was 527 pounds, instead of 440. Here is seen the influence of the shape of the plow on the draft.

In regard to plowing up a 30 per cent grade, the grade itself in no way affects the draft of the plow, but the increase of work results from the team having to lift itself and the plow, together with the plowman, if a riding plow is used, at the rate of 30 feet in every 100 feet. So steep a grade as this does not occur in fields plowed with teams. On such grades as this, the team would be required to lift 30 per cent of their weght to simply move themselves up the hill. Up a hill rising 10 feet in 100, the team, in addition to drawing the plow, would have to exert a force equal to one-tenth of the dead weight of the team, plow and plowman, if a sulky plow. Suppose the sulky plow to weigh 475 pounds, the man 150 pounds, the three horses 3600 pounds, or a total weight of 4225 pounds. Ten per cent of this weight becomes added work for the team when plowing up a 10 per cent grade, so that in plowing a 14 by 7-inch furrow up such a grade the labor for the team becomes what is equivalent to a draft of 860.5 pounds. In other words, to plow up such a grade, with the conditions named, nearly doubles the amount of work required of the team.

VALUE OF GRAPE JUICE.

The effects of unfermented grape juice on the human system have been studied for a number of years, especially at the so called grape cures so long in vogue in Europe. A smaller number of investigations have been made in laboratories.

It is quite generally claimed that using a reasonably large amount of unfermented grape juice with an otherwise suitable mixed diet is beneficial and that digestion is improved, intestinal fermentation diminished, and that gains in body weight result. It should not be forgotten that the abundant diet and hygienic methods of living at grape cure play an important part, but even taking all this into account it seems fair to conclude that some of the good results can be directly attributed to the unfermented grape juice.

Grape juice contains the same kinds of nutrients as other foods. The percentage of water is high, and thus it resembles liquid foods more closely than solid foods. It is somtimes compared with milk, the most common liquid food. It contains less water than milk, more carbohyrates, and less protein, fat, and ash. Carbohydrates, largely present in the form of sugar, are the principal nutritive ingredients. It is evident, therefore, that grape juice is essentially an energy yielding food, and may help the body to become fatter, though it cannot materially assist in building nitrogenous tissue. Sugars in moderate amounts are wholesome foods, and grape juice offers such material in a reasonable dilute as well as palatable form. Undoubtedly the agreeable flavor increases the appetite, a by no means unimportant consideration.

Geese are profitable to raise where one has pasture to turn them out on. They will require almost no grain food and are nearly clear profit when marketed at Thanksgiving or Christmas time.

WHY WE DO NOT CAN FRUIT RAW.

Many a housewife has never asked herself the question: "Why do I cook fruit, vegetables, etc., before canning them? Why not can them raw?" It is not because they are improved by the cooking in either taste or appearance. The women would much rather have whole, fresh peaches, pears, cherries, etc., just as they come from the trees than to have them cooked and preserved. Why then do we cook fruit before canning? Not surely on account of taste and looks, for we would much rather have them fresh if we could.

We cook fruit not for the sake of cooking, but to kill the tiny microscopic organisms with which all fruit and vegetables are covered, and which, if alive, develop and increase in numbers and attack the fruit, causing it to spoil.

There are some substances which resist the attacks of germs. Fermentation germs do not like thick sugary syrup. That is the reason jelly keeps fairly well without air-tight covering. Fermentation germs do not like alcohol. Fruit would keep forever in alcohol, but there are sanitary, economic and moral reasons why we do not preserve fruit in alcohol.

To insure absolute success in canning, there are two things to watch; cook the fruit, etc., long enough to be sure all germs are killed, and then put the food up in a can that is absolutely air tight so that no germs can make their way in after the jar is on the shelf. A fruit jar must be first, last and all the time air tight. There is danger in a porous rubber ring or a top that does not fit to the ten-thousandth part of an inch. The little germs which cause fermentation and decay in food stuffs are so tiny that they could march one thousand abreast through the eye of a cambric needle. It means something to say a fruit jar must be air tight.

Some housewives rather ruffle up at the suggestion that the air in their kitchens contains a germ of any kind. You may think the air in a room is pure as crystal, but let a sum beam fall aslant the floor and you will see that the air contains millions and millions of tiny dust particles. Still smaller than dust particles are the mischevious organisms which cause fermentation. They are here, there and everywhere in every kitchen, no matter how clean.

So remember, successful canning means to kill all the germs by thorough cooking before the fruit or vegetables are placed in the jar and then to use a can that is absolutely air tight; air tight not for a day or a week but for months and years.

The Economy Jar, which has been in use throughout Europe, Australia and the Sandwich Islands for some time, has been introduced into this country and fills the above requirements for a sanitary and absolutely sure-sealing, air-tight jar.

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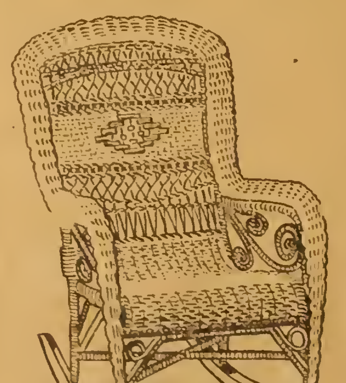

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Queries and Replies

UNSIGNED QUERY.

"Regular Reader" is reminded that anonymous communications go into the Cultivator's waste basket.

CUCUMBER SOIL.

Editor Cultivator:—Will you please inform me how to make good potting soil for cucumber. I have read "Early Cucumbers" in last week's number with much interest.—R. J., Fullerton.

A loose, friable, well enriched loam is all that is needed. Don't be afraid of too much well rotted stable manure, they are gross feeders.

PROBABLY CYPERUS.

Editor Cultivator:—I inclose a sample of grass growing in my orchard. Some say it is nut grass and some say Florida onion. I would like to know if there is any way of killing it out. Please answer through Cultivator as soon as possible.—J. G. S., Arlington.

Your plant is neither nut grass or Florida onion and is too immature to determine with certainty. If you will send us a plant with flowers we will tell you what it is. The young plant sent looks like cyperus or "umbrella grass." There is no way to get rid of it except intensive cultivation. Cyperus seeds always float down the water ditches.

BOTTLE TREE SEED.

Editor Cultivator:—Could you give me any information about the ornamental tree called Diversifolia; as to where I could obtain the seed, as I would like to put out a good many of them. When is the right time to plant the seed, etc.—C. R. Gregg, Downey.

Will some of our readers inform Mr. Gregg in case they have seed of this tree (Sterculia diversifolia, the Bottle Tree). Sow in August or September or very early spring.

IMPROVED SILK REEL.

Many readers have written to ask about the new patent silk reel about which we published a statement some weeks ago. The patent for this invention has not yet been forwarded from Washington, but as soon as it arrives we hope to tell our readers more about it.

MELON APHIS.

Editor Cultivator:—Please give me the best remedy for aphis on watermelon vines.—W. F. S., Tropico.

When Prof. W. F. Clarke of the University was in the South he told the melon growers of Burbank that the most effective treatment was by carbon bisulphide, using a minature tent over each hill. Take two wooden hoops, cut one in two equal parts and arch them over the whole one, crossing them at right angles to make a frame work for a half circle tent. Cover this with glazed paper or some substance that will retain the fumes. Gather up each vine so it will be covered by the "tent," place a small saucer on top of vine and into this pour a small quantity of the bi-sulphide, quickly cover with tent, scrape loose earth around bottom to keep in the gas and proceed down the row. Prof. Clarke states that about forty of these are used by some growers. There seems to be no other practical and effective method of dealing with melon aphis.

The way to prevent robbing is to prevent it—guard yourself against it. Always retail your honey direct to consumer when you can.

SAN FRANCISCO, THE DAUNTLESS.

San Francisco is now in course of reconstruction; the debris is rapidly being removed and the hum of industry has supplanted the roar of the flames. The abiding results of the fire will be wider streets more imposing edifices, larger parks, and a complete fire-fighting system which will utilize the waters of the ocean. The real estate market weathered the storm and shows great activity.

San Francisco is the city of opportunity. The vast fertile country back of it promises the yield of an exceptionally good year's crop. The chance for business investment is magnificent; Eastern and local money will be poured in freely while the rebuilding progresses. The history of all such events as that which has just transpired proves that the ultimate result is a general improvement in conditions and a vast increase in community wealth!

* * *

The following letter has been addressed to canners, orchardists and others throughout California. It is expected that many people will find employment in this way. All those who can give employment of this character should send in their requests to M. V. Stafford, State Labor Commission.

"There are at present a large number of persons in San Francisco and vicinity who would undoubtedly be glad to secure employment in the interior and be of value in handling the crop during the coming season. In order that these may be properly directed it is suggested that you fill out the enclosed form promptly and mail to W. V. Stafford, State Labor Commissioner, Herman and Fillmore sts., San Francisco, who will then advise you as to the filling of your requirements and attend to other details in connection with the plan."

NEW RULE ON DESERT LAND.

Absolute ownership of all water rights is required before desert land entries can be proven up, according to a rule promulgated by the general land office, which has resulted in the rejection of numerous final proofs.

The claimant must be absolute owner of the water stock appurtenant to the land. Five thousand dollars of stock hypothecated for $500 is an insufficient showing of reclamation.

Another drastic rule relative to desert land entries is that only the first plowing and breaking of the land is credited as the work of reclamation. Subsequent cultivation and crop raising is held as a mere investment. These two rules indicate a policy of the general land office adverse to any effort to use the desert land act for speculative purposes.

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Canst be that thou insensate art,
Oh, flag, so loved and cherished
That armies countless thousands strong
Have fought for thee and perished?
That armies countless thousands strong,
At thy dumb call elated,
Would spring to arms again for thee,
Though knowing death awaited?

Nay, quivers life through every fold,
Each wave and undulation
That measures with its rise and fall
The heart throbs of a nation.
Aye, in thy folds, a century old,
A century's life is surging,
And over all waves a clarion call
To blood that needs no urging.

Life thrills thy red, in courage bred;
The purity of thy whiteness;
Thy field of blue, in truths own hue,
Thy stars of dazzling brightness.
And courage, truth and purity,
Thus in thy colors blended,
Have fired the hearts and nerved the arms
Which have thy cause defended.

So children of the men of old
Who first unfurled to glory
The beauty of thy stars and stripes,
Now famed in song and story,—
To save the flag their blood baptized
When we were born a nation,
We pledge the lifeblood of our sons
In solemn consecration.

—Hattie Harl.

EDITING AN AGRICULTURAL PAPER.

The sensation of being at work once again was luxurious, and I wrought all the week with unflagging pleasure. We went to press, and I waited a day with some solicitude to see whether my effort was going to attract any notice. As I left the office. toward sundown, a group of men and boys at the foot of the stairs dispersed with one impulse, and gave me passage-way, and I heard one or two of them say, "That's him!" I was naturally pleased by this incident. The next morning I found a similar group at the foot of the stairs, and scattering couples and individuals standing here and there in the street, and over the way, watching me with interest. The group separated and fell back as I approached, and I heard a man say, "Look at his eye!" I pretended not to observe the notice I was attracting, but secretly I was pleased with it, and was purposing to write an account of it to my aunt. I went up the short flight of stairs, and heard cheery voices and a ringing laugh as I drew near the door, which I opened, and caught a glimpse of two young, rural-looking men, whose faces blanched and lengthened when they saw me, and then they both plunged through the window, with a great crash. I was surprised.

In about half an hour an old gentleman with a flowing beard and a fine but rather austere face, entered, and sat down at my invitation. He seemed to have something on his mind. He took off his hat and set it on the floor, and got out a red silk handkerchief and a copy of our paper. He put the paper on his lap, and, while he polished his spectacles with his handkerchief, he said: "Are you the new editor?" I said I was. "Have you ever edited an agricultural paper before?" "No," I said: "this is my first attempt." Then this old person got up and tore his paper all into small shreds and stamped on them and broke several things with his cane and said I did not know as much as a cow; and then he went out and banged the door after him, and, in short, acted in such a way tnat I fancied he was displeased about something. But, not knowing what the trouble was, I could not be any help to him.

But these thoughts were quickly banished, when the regular editor walked in! [I thought to myself, now if you had gone to Egypt, as I recommended you to, I might have had a chance to get my hand in; but you wouldn't do it, and here you are. I sort of expected you.] The editor was looking sad and perplexed and dejected. He surveyed the wreck which that old rioter and these two young farmers had made, and then said: "This is a sad business—a very sad business. There is the mucilage bottle broken, and six panes of glass, But that is not the worst. The reputation of the paper is injured, and permanently, I fear. True, there never was such a call for the paper before, and it never sold such a large edition or soared to such celebrity; but does one want to be famous for lunacy, and prosper upon the infirmities of his mind? My friend, as I am an honest man, the street out here is full of people, and others are roosting on the fences, waiting to get a glimpse of you, because they think you are crazy. And well they might, after reading your editorials. They are a disgrace to journalism. Why, what put it into your head that you could edit a paper of this nature? You do not seem to know the first rudiments of agriculture. You speak of a furrow and a harrow being the same thing; you talk of the moulting season for cows; and you recommend the domestication of the pole-cat on account of its playfulness and its excellence as a ratter. Your remarks that clams will lie quiet if music be played to them was superfluous—entirely superfluous. Nothing disturbs clams. Clams always lie quiet. Clams care nothing whatever about music. Ah! heavens and earth, friend, if you had made the aquiring of ignorance the study of your life you could not have graduated with higher honors than you could today. I never saw anythink like it. Your observation that the horse-chestnut, as an article of commerce, is steadily gaining in favor is simply calculated to destroy this journal. I want you to throw up your situation and go. I want no more holiday—I could not enjoy it if I had it. Certainly not with you in my chair. It makes me lose all patience every time I think of your discussing oyster-beds under the head of 'Landscape Gardening.' I want you to go. Nothing on earth could persuade me to take another holiday. Oh! why didn't you tell me that you didn't know anything about agriculture?"

"Tell me, you cornstalk, you cabbage, you son of a cauliflower! It's the first time I ever heard such an unfelling remark. I tell you I have been in the editorial business going on fourteen years, and it is the first time I ever heard of a man's having to know anything in order to edit a newspaper. You turnip! I take my leave, sir! Since I have been treated as you have treated me, I am perfectly willing to go. But I have done my duty. I have fulfilled my contract, as far as I was permitted to do it. I said I could make your paper of interest to all classes, and I have. I said I

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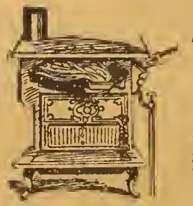

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EASTERN EXCURSIONS at much reduced rates will be run by the Salt Lake Route this summer. From all stations in California tickets will be sold as follows for round trip:
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T. C. PECK, A. G. P. A., Los Angeles, Cal.

could run your circulation up to twenty thousand copies, and if I had had two more weeks I'd have done it. And I'd have given you the best class readers that ever an agricultural paper had—not a farmer in it, nor a solitary individual who could tell a water melon from a peach vine to save his life. You are the loser by this rupture, not me, Pie-plant. Adios." I then left.

WOMAN'S RIGHTS.

I picht tent in a small town in Injiany one day last season, & while I was standin at the door takin money, a deppytashen of ladies came up and sed they was members of the Bunkumvil Female Refórmin & Wimmin's Rite's Associashun, and they axed me if they could go in without payin. "Not exactly," sez I, "but you can pay without goin in." "Do you know who we air?" said one of the wimmin—a tall and feroshus lookin critter,—'do you know who we air, Sir?" "My impreshun is, " sed I, "from a kersory view, that you are shemales. "We are, Sur," said the feroshus woman—" we belong to a society whitch beleeves wimmin has rights—whitch beleeves in razin her to her proper speer—whitch beleeves she is endowed with as much intelleck as man is—which beleeves she is trampled on and aboosed—& who will resist hence4th & forever the incroachments of proud and domineering men."

During her discourse, the excentric female had grabbed me by the coat kollor & was swinging her umbrella wildly over my head. "I hope, marm," sez I, starting back, " that your intentions is honorable. I'm a lone man here in a strange place. Besides, I've a wife to hum." "Yes," cried the female, "& she's a slave! Doth she ever dream of freedom—doth she never think of throwin off the yoke of tyranny, & thinkin and votin for herself? Doth she never think of these here things?" "Not bein a natral born fool," sed I by this time a little railed, "I can safely say that she dothun't." "Oh, whot—whot!" screamed the female, swingin' her umbrella in the air. "Oh, what is the price that woman pays for her experience!" "I don't know," sez I, "the price to my show is 15 cents pur individool." "& can't our society go in free?" asked the female. "Not if I know it," sez I. 'Crooil man!" she cried, & burst into teers. 'Won't you let my darter in?" sed anuther of the excentrick wimin, takin me afeckshunately by the hand. 'Oh, please let my darter in, shee's a sweet gushin child of nature." "Let her gush,'" roared I, mad as I cood stick at their tarnal nonsense: "let her gush." Whereupon they all sprung back with the simultaneous observashun that I was a Beest. "My female friends," said I, "be4 you leeve, I've a few remarks to remark: wa them well. The female woman is one of the greatest institooshuns of which this land can boast. Its onpossible to get along without her. Had there been no female wimin in the world I should scarcely be here with my unparaleled show on this very occashun. She is good in sickness—good in wellness—good at all time. Oh, woman, woman!" I cried, my feelins worked up to a hippoltick pitch, "You air a angle when you behave yourself, but when you desert your firesides, &, with heds full of wimin's rites noshun's go round lke roarin lyons, seeking whom you may devour somebody—in short, when you undertake to play man, you play the devil and air an emfatic noosance. My female friends," I continnered, as they were indignantly departin, "wa well what A. Ward has sed!"—Artemus Ward.

A SOLID PLATFORM.

The Woman's Suffrage Association of Santa Clara county have adopted the following platform:

1. We believe child labor to be not only barbarous cruelty, but the criminal destruction of future helpful citizenship.

2. We believe in compulsory universal education.

3. We believe in the enactment and enforcement of such national pure food legislation as shall protect the people from adulterated and misbranded foods.

4. We believe domestic science should be taught in our public schools.

5. We believe sanitary regulations should be enforced everywhere.

7. We believe the newspapers to be the best medium of education and reform, and we wish to see the press made more reliable and dignified.

8. We believe in public improvements.

9. We believe in equality before the law, and universal suffrage, with an educational clause.

WASH DAY.

Never use any lime or other alkaline powders on your clothes, or you will speedily find hundreds of small holes appearing in them, where the caustic chemicals have eaten the fabric.

The various so called naptha soaps on the market are excellent for cleansing the clothes without much rubbing, according as the soaps are honestly made by reputable manufacturers. Get a good naptha soap, bearing the brand of a standard maker. Follow strictly the directions about using only cold or lukewarm water for the soaking and washing. For the thorough after rinsing the water may be as hot as one wishes. Directions on the wrapper of the soaps say to soak the clothes half an hour, but they may remain in the water all night without any harm, and it is usually more convenient to put them to soak the evening before wash day. If the soap is what it purports to be the clothes will need comparatively little rubbing, and the whitest of them will need no boiling.

A remarkable purifying agent is kerosene, in the family wash as elsewhere. When you use kerosene to make the washing easy you boil the clothes, following these directions: Fill your wash boiler nearly full of cold water and put it over the fire. Shave down a cake of soap or less, according to the size of the boiler. If the boiler holds ten gallons of water, use a pound cake of soap. If it holds six gallons, shave into bits three-fifths of the soap cake. You can judge by your eye how much to use. Stir the soap shavings into the water and let it come to the boil.

Do not use the naptha soaps for this purpose, but just common soap. When the water boils put into it a tablespoonful of kerosene if your wash boiler holds ten gallons; if six galons, not quite three-quarters of a tablespoonful. More will be a waste and possibly may leave an odor upon the clothes. You will see the drops of oil upon the water. Stir them into it. Let the oil and soap water become thoroughly mixed, then clap in your clothes, the whitest and cleanest first. They need no previous soaking or preparation. Let the first lot boil briskly for from twenty minutes to half an hour, then take them out and put the second batch into the same water and boil it accordingly. The more stained and soiled the garments are the longer they will need to boil.

Sometimes there is a third boiling. In that case it is well to add more water, soap shavings and kerosene. While the second batch is boiling you may be rinsing the first lot. It is of the utmost importance that garments thus chemically cleansed with kerosene be thoroughly rinsed. They need usually three rinse waters to mechanically dislodge any dirt particles. The first rinsing may be done with the washboard, rubbing lightly. By this use of kerosene the weekly wash can be put out in half the time and with half the weariness of the old way. The clothes will be dazzling white. Soiled colored garments may be boiled in the mixture after the white clothes have been taken out and will be the cleaner for it.

When you see alleged white garments that are of a dull gray color, like the sheets of a London lodging house bed, you may know that, however well they have been washed, the laundress did not half rinse them. The average laundress is a grievous sinner in this respect. Often the clothes she puts through her hands smell of soap even after they have been dried and ironed. Abundance of rinse water must be used. There must be two rinsings if clothes are to look as they should. Many laundresses use far too much bluing in their rinse water also.

Of course every even halfway well regulated family now has its clothes wringer, which saves knuckles and finger joints and the laundress' strength as well as the garments themselves. Where possible there should be separate from the kitchen a laundry with its own stove, wash bench and ironing table. There ought to be a small ironing board as well as the large skirt board. Men folk must see that there are plenty of good strong clothes poles and clothesline posts.

LETITIA WARREN.

SCOLDING A QUEEN.

Queen Margherita of Italy was recently called to her private telephone in the Margherita Palace at Rome, says the Petit Parisiens, correspondent. The line was laid specially to enable her to converse with her son, the King of Italy, and she naturally expected to hear his voice.

"When are you going to pay me for the coal?" were the words she heard. Seeing at once that there was some confusion her majesty resolved to continue the joke and asked simply, "What coal are you speaking of?"

"You're pretty cool," was the response. "Why, the coal I sent you six weeks ago and can't get you to pay for." A string of insults followed, and the coal merchant was suddenly cut off by a terrified clerk at the exchange who discovered the mistake he had made.

The queen, says the correspondent, was immensely amused at her scolding, and narrated the story with much relish to her suite.

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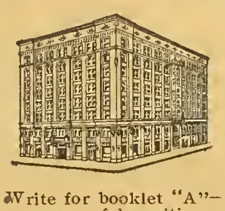

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Santa Fe
Will be in effect every day, Feb. 15 to April 7, and Sept. 15 to Oct. 31, 1906, from all points in the east and south.
Following are a few:

Chicago	$33.00	Kansas City & Leavenworth	$25.00
St. Louis	30.00	St. Joseph & Atchison	25.00
Galveston	26.45	Council Bluffs & Omaha	25.00
Dallas, Houston and Fort Worth			25.00
Nearly all points in Kansas, Oklahoma and Indian Territory			25.00

Colonist rates are also in effect from all points east of Chicago and south of the Ohio river.
Santa Fe Agents in California will take deposits of money to cover price of tickets, which will be promptly furnished to passengers at any point from which these rates are in effect.
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JUST THE THING ALL THE YEAR ROUND

Non-conductive of heat and cold. Does not buckle—lays perfectly smooth. A material which is at once light, strong, durable and cheap, and at the same time water-proof, wind-proof, acid and fume-proof. Also used for covering outside of buildings, floors of warehouses, offices, etc. Requires no paint; is permanent and inexpensive. Comes in various weights.

Samples and price list upon application.

C. SCHEERER & CO.
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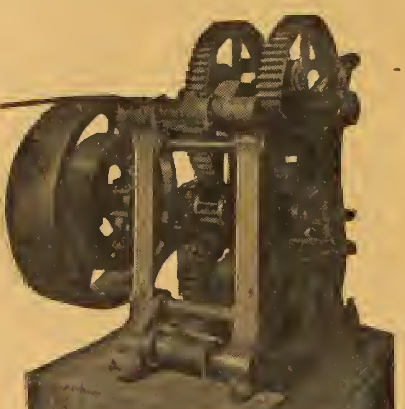
The Pomona Pump



The New Pomona Pump is now being manufactured with machine cut gears and machine cut steel or bronze pinions. The pump fitted with this kind of gearing runs as smooth as a clock and there is absolutely no noise or vibration. The company have recently taken contracts for installing their largest sized pump with this class of gearing for the Artesian Belt Water Company of San Dimas, Western Water & Power Company of Glendora and other large irrigation companies. They are required to furnish these pumps with cylinders up to 12 inches in diameter and 72 stroke which has capacity of over 60 Miner's inches of water. The valves are made entirely of phosph r bronze with ground metal taper seats so there is very little obstructiin to the water in passing through them and it is impossible to clog them with sand. These, in connection with machine cut gears, in the pump head, make a strictly high grade pumping outfit and the oest by a long ways of anything on the market today.

This head and valves are both protected by United States patent. Beware of infringing as both manfacturer and user are liable.

The company has recently installed one of their latest improved heads for the Santa Anita Land Company, a subdivison of the Baldwin Ranch. Below is what the owners have to say about it:

"The new 38 pump you installed for us on our tract on the E. J. (Lucky) Baldwin Ranch is giving us satisfaction in every way. We think we have the very best that money will buy. Both as regards to pump, material used and installation. We made an excellent change when we removed the pump we had been using and installed your make."

We have pleased these people and there is no reason why we cannot please you.

Send for catalog to

The Pomona Manufacturing Co.
Pomona California

When writing advertisers mention Cultivator.

The Produce Markets

Los Angeles Markets.

Los Angeles, Cal., May 30, 1906.

Butter.

Local Creamery, per roll	.45
Valley Creamery, fancy	.42-45
Coast, Fancy	.40@42½
Coast, Choice	.37½@40
Fancy Eastern Cubes	.24
Cooking	.18

Cheese.

Cal. 3-℔. hand	.18
Cal. Young America	.17
California Anchor, Large	.16
Northern	.13-14
Domestic Swiss	.20
Imported do	.28

Eggs and Poultry.

Eggs, fresh ranch	.19½
Northern Candled	.18

There is more difference between prices to producers of poultry and to the retailers of poultry than in most other lines. The following are average prices which dealers pay to producers for live weight:

Hens, per ℔	.13
Young roosters, per ℔	.17
Fryers	.17
Broilers, per ℔	.17
Old Roosters	.8
Turkeys	.19
Geese	.12
Ducks	.12

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock:

Hogs, 200 ℔s	.6½
Prime Steers	.4½
Cows	.4
Calves, per ℔	.4½-5
Sheep, ewes, per head	.4.25
Lambs, per head	.3.25
Wethers	.4.75

Potatoes.

Burbanks, fancy	1.60@1.75
Salinas, choice	1.75@2.00
Oregon	$1.35-$1.50
New, per sack	$1.75-2.35

Sweet Potatoes.

White	$3.00

Vegetables.

Onions, fancy Nevadas	2.50@3.00
New Onions	2.50@3.50
Bermuda	2.50
Garlic	.8@10
Wax Beans	.4@5
Rhubarb, per box	.75@1.00
Parsnips, per doz	.35
Cauliflower, per doz	.85
Asparagus	.6@7
Lettuce, per dozen	.10@15
Bell Peppers	.15@18
Chili Peppers, Green	.15
Chili, dried	.20
Cucumbers, per doz	.30@75
Radishes, per doz	.15
String Beans	.2@3
Beets	.40
Green Onions, doz. bunches	.25@35
Carrots, doz. bunches	.25@35
Peas, per lb	.2@3
Turnips, doz bunches	.25@30
Celery, per doz	.45@60

Citrus Fruits

Lemons, Standard	1.25@1.50
Lemons, Choice	2.00
Lemons, Fancy	$2.50@2.75
Navels, Choice	2.00@2.25
Navels, Fancy	2.50
Grapefruit	2.50@3.50
Grape Fruit, seeds	1.50@1.75

Fresh Fruits.

Apples are very scarce and of indifferent quality. A few Missouri Pippins from Colorado are offered.

Missouri Pippins	3.25@3.50
Apricots, per 30-℔. box	$1.50@1.75
Strawberries	.4@5
Dewberries	.5
Bananas, per ℔	.5@5½
Cherries, B. Repub	.7@10
Cherries, B. Tar	.8@12
Cherries, White	.5@6
Logan Berries	.6@8
Raspberries	.8@10

Dried Fruits

Evaporated Apples, ch to fy	.10
Apricots	.5@10
Peaches	.10½
Pears	.11½
Santa Clara Prunes	.4@8½
Smyrna Figs	.15@17

Beans, Dried.

Limas, No. 1	.5.00
Pinks, fancy	2.40@2.60
Lady Washington	3.10@3.25
Small White	3.60@3.75
Black Eyes	6.50

Honey.

The honey prices here quoted are those of the Los Angees Board of Trade, the most responsible authority we have. They are jobbers prices, that is, prices at which the jobber sells to grocers and others in small lots. The producer can take from this his freight to Los Angeles and one cent per pound for commission and will have left the net price to him. On next week's editorial page we hope to explain this matter more fully.

Honey, extracted, water white, 60-℔ cans	.6
Honey, extracted, water white	.5½
Light amber	.5
Comb, white, 1-℔ frames	.14-15
Light amber	.12@12½
Beeswax	.25

Nuts.

Peanuts, Virginia	.6½
Peanuts, California	.5
Walnuts	.13½

Hay.

Barley, No. 1	14.00@15.00
Barley, No. 2	10.00@12.00
Alfalfa, local	12.00@13.00
Whole Hay, No. 2	10.50@12.50
Plain Oat Hay, No. 2	10.00@12.00

Grain.

Purchasing prices f. o. b., Los Angeles, are:

Wheat	1.25@1.37½
Barley	1.20@1.22½
Corn	1.22 @1.24
Rolled Barley	1.40
Bran	1.20
Feed Corn Meal	1.45
Shorts	1.45
Wheat, per cwt	1.50@1.65
Cracked Corn	1.45
Oil Cake Meal	2.50
Cocoanut Meal	1.50

San Francisco Markets.

San Francisco, May 29, 1906.

Lombard-street wharf—

The ruling prices of the San Francisco Wholesale Dairy Produce Exchange yesterday were as follows:

Butter.

BUTTER—Fresh California, extra, 18c; firsts, 17@17½c; seconds, 16c; packing stock, firsts, 15c; seconds, 14½c.

Cheese.

CHEESE—New California fancy, 10c; firsts, 9½c; Young America fancy, 10c; Eastern, New York fancy, 16½@17c.

Eggs.

EGGS—Fresh California, selected, 18c; firsts, 17@17½; seconds, 16@16½c.

Poultry.

POULTRY—Old Roosters, per doz, $3.50@4.50; young roosters, $5@7; Fryers, $3.50@4.50; broilers, $2@3.50; hens, small, $4.50@5; large, $5@7; live turkeys, per lb. nominal; dressed turkeys, nominal; ducks, old, nominal; young, nominal; geese, per pair, nominal; goslings, nominal; pigeons, per doz., $1; young, $1.50.

Fresh Fruits.

Greenwich-street wharf—

The leading fruits now in market sold yesterday at the following prices: Strawberries, per chest, $4.50@7 for large varieties and $8@10 for Longworths; apples, $1.50@2.25 per box; cherries, black varieties, 50@85c per drawer; white, 35@50c per drawer; cherries in bulk, black, 4@6c per lb.; white, 3@5c; gooseberries, 25@35c per drawer; oranges, navels, $2.25@3 per box, with a few second grade at $2 per box; lemons, $1.50@2.75 per box; Mexican limes, $3.50@5 per box; bananas, 75c@$1.75 per bunch; pineapples, $2@3 per dozen; premis Berries, $3@4 per chest; currants, 45@60c per drawer; Loganberries, per chest, $5@7.

Vegetables.

Greenwich-street wharf—

Dealers sold vegetables yesterday at the following prices: Asparagus, $1.50@2.50 for small and $2.75@3.50 for large box; green peas, 75c@$1.15; per sack; rhubarb, 75@09c per box for small and $1@1.25 for large; string beans, 3@4c per ℔; tomatoes, 75c@1.25 per box; potatoes, new, 1@1¼c per lb; old Rivers, 80c@$1.10 per sack; Oregon, 80c@1.10; Coos Bay, $1@1.15 per sack; onions, new, 75c@$1 per sack; boxes, 25@50c; Oregon, $2@2.50 per cental, as to quality; Australian, $3.50@4; cucumbers, $1.50@2 per box.

Flour and Gain

FLOUR—Net cash: Family Extra, $4.75@5.10 per barrel; Bakers' Extra, $4.40@4.75 per barrel; Oregon and Washington, $3.50@4.

WHEAT—No. 1 Shipping, per cental, $1.30@1.32½: inferior grades, $1.25@1.27½; White Milling, good to choice, $1.32½@1.37½, with fancy up to $1.40.

BARLEY—No. 1 Feed, $1.15@1.16¼ with fancy up to $1.17½: common to fair, $1.06¼@1.12½: Brewing, nominal.

OATS—White, $1.35@1.60; Red, $1.50@1.60; Black, $1.30@1.40.

RYE—$1.47½@1.55 per cental.

CORN—Small round yellow, $1.55@1.65; Western, mixed, $1.32½; yellow, $1.30@1.35; white, $1.35@1.40 per ctl.

Hay and Feed Stuffs

HAY—Per ton choice Wheat, $13@17.50; Wheat and Oat, $10.50@14.50; Oat, $10@14; Barley, nominal; Alfalfa, $10@12; Stock, $7@7.50.

STRAW—Per bale, 35@65c.

FEED—Mixed Feed, per ton, $24@25; Calfalfa Meal, $23.50; carload lots, $22; Mealfalfa, per ton, $23.50; carload ots, $22.

BRAN—Per ton, $19@21.

MIDDLINGS—Per ton, $2[illegible].

GROUND BARLEY—Per ton, $25@27.50.

FEED CORN MEAL—Choice grades, per ton, $27.50@28.

CRACKED CORN—Choice stock, per ton. $28@28.50.

COCOANUT CAKE—In lots of ten tons, $23; 5 tons, $23.50; less quantity, $24. Prices are mill rates and are subject to change without notice.

OILCAKE MEAL—Mill rates in 5-ton lots, $37.50; jobbing, $38@38.50.

Beans and Seeds.

BEANS—Prices, per ctl.: Large White, $2.40@2.70; small do, $3.25@

3.45; Pea, nominal; Lima, $4.50@4.70; Red, $3.75@4; Pink, $1.85@2; Bayo, $3.75@4; Blackeyes, $5.25@5.50; Red Kidneys, $3.50@3.75; Horse Beans, nominal.

SEEDS—There are scarcely any suppies on hand and prices are nominal.

Hops.

Desirable grades of California, crop of 1905, sell at 7@10c per lb; 1906 crop, for future delivery, 8@11c.

CITRUS MARKETS

New York, May 29.—Twenty-one cars were sold at auction today. The market remains strong on all varieties. The weather is favorable. The past week has been one of exceptionally good prices at all chief Eastern points and in no case has the supply exceeded the demand.

WASHINGTON NAVELS.

	Averages
Pet,, xc, San Antonio Ex	$2.90
Stork, xc, San Antonio Ex	3.05
Diamond, xc, San Antonio Ex	3.75
Stork, xc, San Antonio Ex	3.80
Greyhound, ch, San Antonio Ex.	3.65
Spanish Girl, A. H. Fruit Co	2.75
Settler, A. H. Fruit Co	2.90
Fiesta, xc, Riverside Ex	3.00
Eagle, xc, Riverside Ex	3.10
Uncle Sam, xf, Riverside Ex	3.15
Eagle, xc, Riverside Ex	3.25
Our Pride, xf, Riverside Ex	3.25
Yankee Doodle, ch, Riverside Ex	3.40
Square, or, Riverside Ex	3.60
Unce Sam, xf, Riverside Ex	3.80
Blue Globe, xf, Riverside Ex	3.85
Don Quixote, ch, Semi-Tr. Ex	3.35
Quail, xc, O.-C. Ex	4.45
Golden Eagle, st, C.C.Chapman.	3.50
Old Mission, ch, C. C. Chapman.	2.95
Flower, ch, Upland district	4.05
Flower, fy, Upland District	4.35

THOMPSON IMP. NAVELS.

Colonel, xc, Or. Gro. Cash Ass	4.30
Colonel, xc, O. G. C. A. (halves)	1.60
Signet, xg, Or. Gro. Cash Assn	4.50

SEDDLINGS

Violet, xc, Duart-Mon. Ex	4.05

MEDITERRANEAN SWEETS.

Alpha, xf, Riverside Frt. Co	4.20

ST. MICHAELS

Old Mission, fy, C. C. Chapman	4.65
Golden Rule, xc, Riverside Ex	3.65
Alpha, xf, Riverside Frt. Co	3.90
La Mesa, xf, Riverside Ex	4.10

ST. MICHAELS (HALF BOXES)

Rose, xf, Redl. Or. Gro. Ass	2.00

BLOODS (WHOLE BOXES)

Red Globe, xc, Riverside Ex	3.30
Don Quixote, ch, Semi-Tr. Ex.	3.80
Alpha, xf, Riverside Fr. Co	4.05

PINEAPPLE SEEDLINGS

Slover Mountain, fy, Colton	3.95

GRAPE FRUIT.

Uncle Sam, xf Riverside Ex	2.80
Our Pride, xf, Riverside Ex	2.85
Our Pride, xf, Riverside Ex	3.35
Iris, xf, Duarte-Mon Ex	4.75

GRAPE FRUIT (HALF BOXES)

Our Pride, xf, Riverside Ex	1.55
Blue Globe, xf, Riverside Ex	2.60
Signet, xf, Or, Gro. Cash Ass	4.65
Colonel, xc, Or. Gro. Ass	3.85

Foreign Lemon Sale.

New York, May 29.—Five thousand boxes of Sicily lemons were sold at auction here today. The market is steady and today's prices were practically unchanged. There will be another sale held Friday when 20,000 boxes will be offered.

NO SUN FLOWER SEED FOR CHICKS.

We raise our sunflowers just as we do corn, planting them with the corn planter on one side of the corn field farthest from the house. Sunflower seeds are not good for young chicks. One year we planted a quarter of an acre near the house. The hens would take their broods there and the chicks would gorge themselves with the fallen seeds. The younger ones could not digest the hulls and so we lost over 50 per cent. We find the chief value of sunflower seeds in giving change of ration and making plumage glossy. We feed sparingly, even to old fowls, but believe them essential to a well-balanced ration for eggs and show birds.—N. E. C.

KEEP THE LARGE FOWLS.

We have kept a large breed for many years and find it profitable to do so as our fences do not have to be made so high and then when company comes or the threshers turn up it does not take half the flock to make a meal and when we go to market they pull down the scales until the dealer looks around to see if we have not put a stone in the crop to make it weigh so heavy, but he finds no stone. Only a few hens, and he makes out a good b[illegible] check.—Ex.

The Macabee gopher trap, safe, simple, sure, is advertised in another column. If not kept on hand by your local hardware store, order by mail. Address the manufacturer at Los Gatos, Cal.

Percy L. Harley, breeder of buff, black, and white Orpingtons, announces a cut of one-half the price on all eggs the balance of the season except best buff. A picture of two of his prize winners appears on another page of this week.

Main 4514 Home 3770
J. D. Robinson Co., Fruits and Produce
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ORPHANS RECEIVED

South Pasadena, April 23, 1906.

The following named children have been admitted to the Boys and Girls' Aid Society of South Pasadena since last report:

Orphans—Charles Davis, Amer., 12 years of age, blue eyes and brown hair.

Half orphans—Albert Kujaneck, Ger., 13 years old, grey eyes, dark brown hair. Leroy Hunter, Amer., 7 years old, brown eyes, dark brown hair. Ida Marks, Port., 10 years old, brown eyes and brown hair. Marie Marks, Port., 8 years old, brown eyes and brown hair. Bently Stinhoff, Amer., 10 years old, blue eyes, light brown hair. Walter Higgins, Amer., 12 years old, blue eyes, light brown hair. Maud Hogan, Amer., 13 years old, blue eyes, brown hair. Geo. Mazet, Mex., 10 years old, black eyes, brown hair. Leonard Kujaneck, Ger., 12 years old, grey eyes, brown hair. Walter O'Brien, 7 years old, Amer., blue eyes, brown hair. Arthur O'Brien, 9 years old, Amer., blue eyes, brown hair. Joseph Gardner, Amer., 13 years old, blue eyes, black hair. Harry Gardner, Amer., 13 years old blue eyes, black hair Joseph Marks, Port., 5 years old, grey eyes, brown hair. Guy Frits, Amer., 8 years old,brown eyes, brown hair. Velma Frits, Amer., 6 years old, blue eyes, brown hair. Eva Dutra, Amer., 9 years old, brown eyes, black hair. Orris Mills, Amer., 7 years old, brown eyes, brown hair. Lucile Mills, Amer., 6 years old, blue eyes, golden hair. Frank Escamille, Mex., 6 years old, black eyes, black hair. Hazel Evans, Amer., 11 years old, blue eyes, brown hair. Leo. Rowan, Amer., 9 years old, black eyes, brown hair. Martin Friedell, Amer., 5 years old, blue eyes, brown hair. Sarah Carrillo, Mex., 12 years old, black eyes, black hair. Felisino Carrillo, Mex., 10 years old, black eyes, black hair. Marino Carrillo, Mex., 8 years old, black eyes, black hair. Tom Carrillo, Mex., 5 years old, black eyes, black hair. Ward Clarke, Amer., 8 years old, blue eyes, brown hair. Hartley Porter, Amer., 12 years old, blue eyes, brown hair.

CERTIFICATE OF PARTNERSHIP.

State of California, County of Los Angeles, ss.

We, the undersigned, J. J. Steadman, H. A. Perkins and Frank Honeywell, do hereby certify that we are the persons transacting business in the State of California, at the City of Los Angeles, County of Los Angeles, under the firm name and style of the Cultivator Publishing Company; that the names in full of all the members of such copartnership are J. J. Steadman, H. A. Perkins and Frank Honeywell, and that the places of our respective residences are set opposite our respective names hereto subscribed.

Names.	Residences.
J. J. STEADMAN,	Hollywood, California.
H. A. PERKINS,	South Pasadena, California.
FRANK HONEYWELL,	1702 Hoover street, Los Angeles, California.

State of California, County of Los Angeles, ss:

On this 12th day of May, 1906, before me, H. E. Storrs, a notary public within and for said county and State, residing therein, duly commissioned and sworn, appeared J. J. Steadman and Frank Honeywell, known to me to be the persons described in and whose names are subscribed to the foregoing instrument, and each of them acknowledged to me that he executed the same.

In witness whereof I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

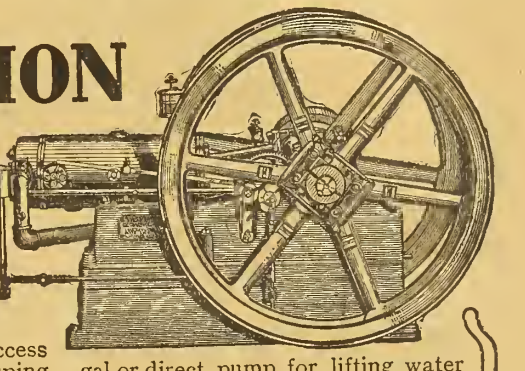
(Seal) H. E. STORRS,
Notary Public in and for said County of Los Angeles, State of California.

State of California, County of Los Angeles, ss:

On this 14th day of May, in the year of our Lord one thousand nine hundred and six, before me, H. E. Storrs, a Notary Public in and for said County of Los Angeles, State of California, residing therein, duly commissioned and sworn, personally appeared H. A. Perkins, known to me to be the person whose name is subscribed to the within and annexed instrument, and acknowledged to me that he executed the same.

In witness whereof I have hereunto set my hand and affixed my official seal in said county, the day and year in this certificate first above written.

(Seal) H. E. STORRS,
Notary Public in and for Los Angeles County, State of California.

FOR IRRIGATION By PUMPING

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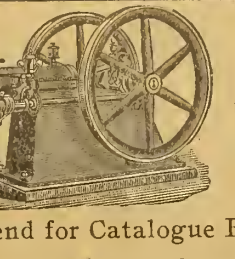
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Gas, Gasoline and Distillate Engine
Embodying New and Important features in design and operation.
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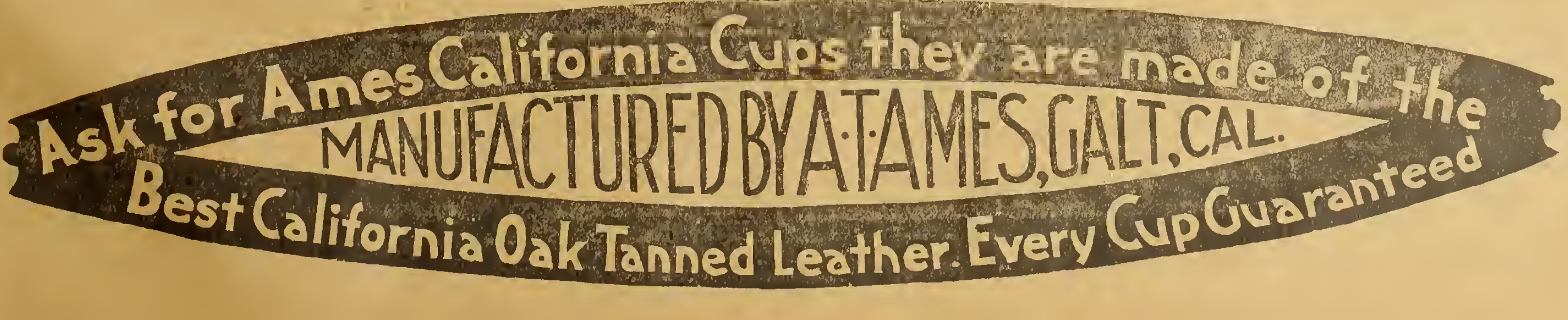
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Maximum Power at Minimum Cost

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Success Pumping Portable Traction Engines

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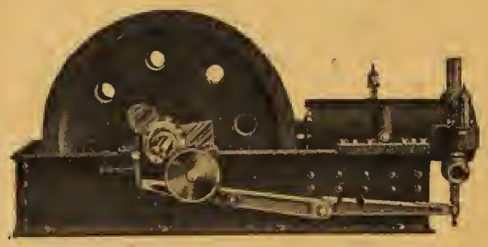

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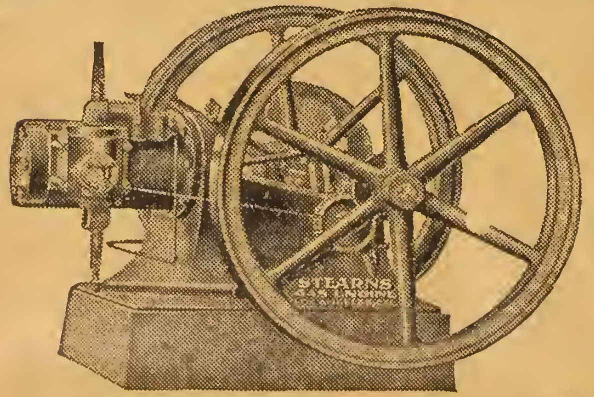

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Are the most economical in first cost, fuel consumption and repair bills. Complete equipments for irrigation or drainage. Write us your wants in this line and let us give you an estimate, or call at our works and see the engines in operation.

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Simplicity is its feature. You do not need to be an experienced engineer to operate the Haynes. My prices are the lowest for a first-class engine. Guaranteed.

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Foos Gas Engines

The Foos Gas Engines have many leading features which go to make it the best type of Gas Engine. Simplicity, Reliability and Economy, together with fine bearings and workmanship, make it a life-long engine. Our Market Street store and office was destroyed by the fire, but we have a large stock of Engines at our warehouse, also a large stock at our Los Angeles warehouse, and can make prompt shipments. Send for catalogue.

Temporary Office, 2323 Fillmore St., San Francisco
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THE CALLAHAN DISTILLATE ENGINES

A First Class Engine at a Moderate price. Four Carloads have arrived since the fire.

Three Carloads of **Centrifugal Pumps** in Stock.

G. W. PRICE PUMP CO.
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Telephone Oakland 4376

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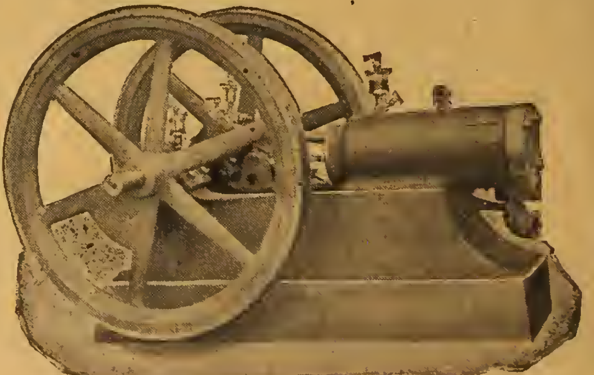

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We make complete Irrigation Outfits.

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Are the best. The enlargement of our factory makes it possible for us to make prompt delivery.

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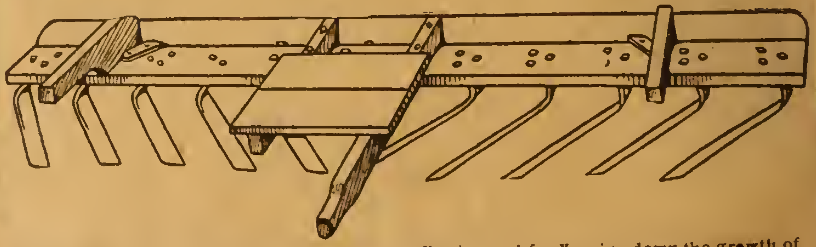
THE

Killefer Clean Cut Weeder



Is just what the name implies. It is the most effective tool for keeping down the growth of weeds after rains or irrigating on orchard, beet, bean or grain land. It does twice the work of any other tool with the same power. The knives overlap so it is impossible to miss any weed. Built in 6, 8, 10 and 12 foot sizes. The patented knives are so formed that they wear uniformly from heel to point, causing them to wear twice as long as any other blade for the same purpose. It is ***the*** tool for weed killing on any kind of cultivated land. Blades can be attached to cut in or out as desired.

The Killefer-Griffith Mfg. Co., 1336 Palmetto Street, Los Angeles, Cal.

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MADE FROM CALIFORNIA REDWOOD OR SELECTED PUGET SOUND YELLOW FIR **WOOD PIPE** WOODWARD PATENT MACHINE BANDED PIPE
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BORED WOOD WATER PIPE

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630.5
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CALIFORNIA CULTIVATOR

DEVOTED TO
AGRICULTURE
IN ALL ITS BRANCHES

LOS ANGELES JUNE 7, 1906 SAN FRANCISCO

A TYPICAL SHORTHORN OF THE DAIRY STRAIN

PROPERTY OF ROBT. ASHBURNER OF BADEN FARM, SAN MATEO COUNTY, CAL.

There are, in round numbers, seventeen and one-half millions of dairy cows in the United States. In 1850 the average production of milk and butter per cow was only 1,436 lbs. milk and 61 lbs. butter. In the decade from 1850 to 1860, the increase was only 69 lbs. milk and 3 lbs. butter. In the decade from 1890 to 1900 the average production of milk and butter per annum per cow was increased to 3,646 pounds of milk and 155 pounds of butter, a gain of 917 lbs. milk and 40 lbs. butter average per cow.

THE HEN.

The honorable Secretary of Agriculture has finished his count of the eggs laid by the American hen during the past year. The result entitles every rooster to crow just as loud and lustly as he cares to. Like most other families, that of the chicken is one in which the female works and the male boosts. But in this instance the sequel is reversed, and instead of laying low for her mate the hen has laid high! For the honorable Secretary's count came out even 20,000,000,000. Think of it!

Passing over Farmer Wilson's task, which has cooped him up for some time, let us do a little figuring on our own hook. Placed end to end—well, that is a little hackneyed, but it is according to the Hoyle of statistics—these eggs would reach from the earth to the moon and back again; and there would still be enough of them to circle this big egg on which the hens and we live.

A limited train, running fifty miles an hour and making no stops, would have to run one year and one month to take a passenger from the first egg to the last one, and it's ten to one the passenger wouldn't want to get out of the car at the finish—unless the last egg was in cold storage! If the first egg in the line were to burst with enthusiasm—or something more common to eggs—and some one at the last one was possessed of absolutely perfect hearing, and sound could travel that far, it would be thirty hours before the echo of the explosion became audible. And this is straight, even though it is a shell game.

Placed in the balance and not found wanting, the combined weight of this layout would equal three-fourths of the total tonnage of the whole British navy, though, of course, all the eggs would not float. Made into one omlet, the dish on which it was served would have to have a minimum area of at least 9000 square miles, and every human being alive could have one generous helping. Made into eggnog, they would, according to the most reliable authority at hand, set 2.599,999,999 gentlemen hunting keyholes, allowing, of course, for the number who would never get to the place where the keyhole was.

If Adam and the Apple Woman had begun soft-boiling these eggs the very minute after they reached Eden, and had taken them one at a time, the job would still be in its infancy, and would have 140,000 years to run, unless the Egg Boilers' Union stepped in and enforced an eight-hour day, under which circumstances multiply by three.

Valued at 20 cents a dozen, which is probably a fair average the country over, season in and season out, these oblong spheres would about represent the nest-egg of our esteemed fellow-citizen, John D. Rockefeller, or in round figures, $333,333,333.

Truly the American egg is a great institution. The eagle may scream, but the Hen lays it all over him in good form, except when it's bad.—Pa. Farmer.

Old plaster, oyster shells, and clover hay furnish liberally of soluble lime for making egg shells. Cut clover is one of the best foods we have for the layers. Farmers should see that their poultry have lots of it, especially during the winter.

EGGS, 7c DOZEN

What Does It Cost You a Dozen for Your Eggs?

Wouldn't you like to buy a few thousand dozen of nice large fresh laid eggs for 7c a dozen?

And if you learn how to make eggs at a cost of 7c a dozen, it will be equally as good for you, won't it?

You know what the market price is for eggs today, and you know they will be higher after awhile—perhaps 30c, 40c, or even 50c a dozen. Well, if you can get good eggs at a cost of 7c or 8c a dozen, you can see a good chance to make some money this year—can't you?

The Lord helps those who help themselves—therefore, you must act, and do something for yourself when you read this. We'll show you how to make the eggs at a cost of about 7c a dozen, if you want them. How many laying hens have you got? How many eggs do they lay a week? What do you feed them? How much a day does it cost to feed them? Did you ever figure how much a dozen it costs you to produce eggs? Did you know that some feeds costing $40.00 a ton or more, will produce eggs at a less cost per dozen than the other feeds costing $18.00 to $20.00 a ton?

Every poultryman knows about how much a dozen he can sell eggs for, but how many poultrymen figure how much a dozen it costs them to produce these?

When you buy feed, don't figure how many pounds or how many sacks you are going to get for so many dollars, but MAKE MONEY BY USING YOUR BRAINS—BUY THE FEED THAT PRODUCES THE MOST EGGS. The feed that makes the hens lay the most eggs with the smallest number of pounds of feed—figure how much a dozen you can produce eggs for.

INTELLIGENT MEN buy COULSON'S IMPROVED MASH EGG FOOD for their hens—and the other kind of men who haven't any brains, don't know enough to buy it, consequently, they are not making as much money as they might be making. You find them a slave in the world—have been ten or maybe twenty years struggling on and still a poor man. They have nobody but themselves to blame—they know it all; don't want to learn; never will learn—scoff at new ideas—and remain a poor slave.

* * * ** * *

You can produce eggs by feeding COULSON'S IMPROVED MASH EGG FOOD at a cost of 7c or 8c per dozen. For illustration:

Suppose a man has 1000 hens—a 90-pound sack of the IMPROVED MASH EGG FOOD will make the morning meal, as it is not necessary to add anything else to it. A sack of wheat, say 125 pounds, will make the evening meal. The IMPROVED MASH EGG FOOD will cost, say $2.00 and the sack of wheat about $2.00, making the feed for the day cost about $4.00. Now 1000 hens, fed on IMPROVED MASH EGG FOOD, ought to lay at least 600 eggs a day; that would be 50 dozen, so we say the cost would be 8c a dozen; in some cases, where they get 700 eggs per day the cost would only be 7c per dozen.

At the present time, with eggs selling at 17c and 19c per dozen, and as eggs go higher, you can see your profits of so much per dozen, and you can see how much better it is to feed the BEST FEED; therefore it is **FAR CHEAPER** to feed the IMPROVED MASH EGG FOOD to your hens, where it only costs you from 7c to 8c to produce a dozen eggs; whereas it will cost you 10c or 12c per dozen feeding other feeds. This saving of 3c per dozen on the cost to produce eggs inside of a year would mean a whole lot to you.

Eggs at 7c Dozen Earn $12.00 a Day

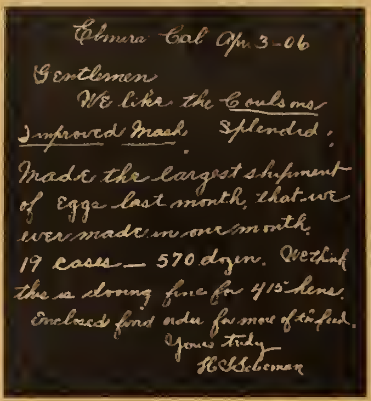
M. Sartori, near Tomales has nearly 2500 laying hens—he feeds them $2.25 worth of COULSON'S MASH EGG FOOD every morning, and about $5.00 worth of wheat in the evening. Total cost of feed, $7.25 per day.

These hens are now laying 105 dozen eggs per day, and sometimes more—by feeding them COULSON'S IMPROVED MASH EGG FOOD once a day, they produce eggs at 7c per dozen.

Mr. Sartori is now getting 19c per dozen, therefore he makes a profit of **OVER $12.00 a day** by feeding COULSON'S MASH EGG FOOD.

4 CENTS A MONTH
to feed a hen Coulson's IMPROVED Mash Egg Food Every Day. Two eggs a month pays for the feed and when you get 18 to 20 eggs a month think of the money the hen earns for you.

Feed $40.10 —— —— Eggs $108.30



Elmira Cal Apr 3-06

Gentlemen

We like the Coulsons Improved Mash Splendid. Made the largest shipment of Eggs last month, that we ever made in one month, 19 cases — 570 dozen. We think this is doing fine for 415 hens. Enclosed find order for more of the feed.

Yours truly

H. L. Scheman

325
Car Loads
of this feed, called COULSON'S EGG FOOD used in California during the year 1905

Don't you think it must be good? Used as a straight feed for the pullets and laying hens—for sale at Feed Stores.

For further particulars, write to

Coulson Poultry & Stock Food Co., Petaluma, Cal.
(The Greatest Chicken Village in the World.)

Fed 10 sacks COULSON'S IMPROVED MASH EGG FOOD, Cost	$19.50
3 sacks COULSON'S SCRATCHINGS, Cost	6.45
Wheat and other Grain, Cost	14.15
Cost of feed per month	$40.10

RESULT: 570 dozen eggs at 19c a dozen $108.30—450 hens feed on COULSON'S IMPROVED EGG FOOD.

Profit one month. $68.10. Cost of producting eggs, 7 1-3c a dozen. Cost is not much—2 pounds feeds a hen a month.

Ask your dealer for Coulson's Improved Mash Egg Food or write for circulars and samples. Send 10c postage for a beautiful book, "RAISING CHICKENS."

ASK YOUR DEALER OR WRITE TO

COULSON POULTRY & STOCK FOOD CO., PETALUMA, CALIFORNIA

CALIFORNIA CULTIVATOR

Vol. XXVI—No. 23 LOS ANGELES, CAL., THURSDAY, JUNE 7, 1906 Subscription $1.00 a Year

The Farmer's Home Vegetable Garden

By W. R. Beattie, Assistant Horticulturist, Bureau of Plant Industry

Perhaps the most characteristic feature of our American farms is the home vegetable garden. Even where no orchard has been planted, and where the ornamental surroundings of the home have been neglected, a fairly well-kept garden in which are grown a number of the staple kinds of vegetables is generally to be found. In many cases the principal interest in the garden is manifested by the women of the household and much of the necessary care is given by them. A small portion of the garden inclosure is generally devoted to the cultivation of flowers, and a number of medicinal plants are invariably present. Throughout the newer parts of the country one finds that the conditions governing the maintenance and use of the vegetable garden are somewhat different, and, while a number of vegetable crops may be grown somewhere on the farm, there is wanting that distinction so characteristic of the typical New England kitchen garden.

It would be impossible to make an accurate estimate of the value of crops grown in the kitchen gardens of the United States, but from careful observation the statement can safely be made that a well-kept garden will yield a return ten to fifteen times greater than would the same area and location if devoted to general farm crops. A half acre devoted to the various kinds of garden crops will easily supply a family with $100 worth of vegetables during the year, while the average return for farm crops is considerably less than one-tenth of this amount. A bountiful supply of vegetables close at hand where they may be secured at a few moments' notice is of even more importance than the mere money value.

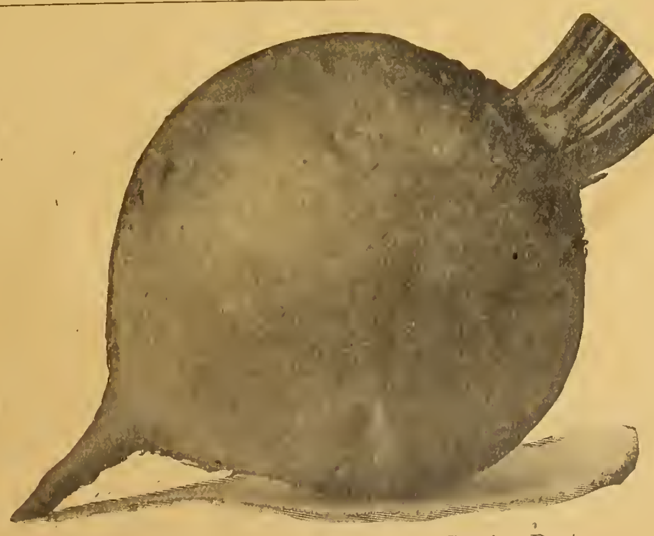
Fresh vegetables from the home garden are not subjected to exposure on the market or in transportation and are not liable to become infected in any way. Many of the products of the garden lose their characteristic flavor when not used within a few hours after gathering. By means of the home garden the production of the vegetable supply for the family is directly under control, and in many cases is the only way whereby clean, fresh produce may be secured. The home vegetable garden is worthy of increased attention, and a greater number and variety of crops should be included in the garden.

Suggestions are herein given as to the location of the garden, the soil and its preparation, fertilizers, seeds, and plants, with brief cultural methods for a number of the more important crops.

* * *

Location—The question of the proximity to the house or other buildings is of great importance when locating the garden. In old homesteads the garden was generally located directly adjacent to the house, requiring but a few steps from the kitchen to reach the extreme parts of the garden. The work of caring for a garden is usually done at spare times, and for this reason alone the location should be near the dwelling. In case the site chosen for the garden should become unsuitable for any cause it is not a difficult matter to change the location. Many persons prefer to plant the garden in a different location every five or six years.

The lay of the land has considerable influence upon the time that the soil can be worked, and a gentle slope toward the south or southeast is most desirable for the production of early crops. It is an advantage to have protection on the north and northwest by either a hill, a group of trees, evergreens, a hedge, buildings, a tight board fence, or a stone wall to break the force of the wind.



Dewing's Improved Blood Red Garden Beet.

Good natural drainage of the garden area is of prime importance. The land should have sufficient fall to drain off surplus water during heavy rains, but the fall should not be so great that the soil will be washed.. The surface of the garden should not contain depressions in which water will accumulate or stand. Waste water from surrounding land should not flow toward the garden, and the fall below should be such that there will be no danger of flood water backing up. The garden should not be located along the banks of a creek or stream that will be liable to overflow during the growing season.

A good fence around the garden plot is almost indispensable, and it should be a safeguard against all farm animals, including poultry, and should be close enough to keep out rabbits. A tight board fence will accomplish this result and also serve as a windbreak.

Plan and Arrangement.—It would be difficult to give a plan or specific arrangement for a garden that would suit all demands, and such a plan must be devised by each individual grower. Suggestive arrangements, however, are here presented, with the idea that they can readily be changed to suit local conditions.

* * *

Kind of Cultivation.—The first consideration in planning the arrangement of a garden is the kind of cultivation that is to be employed. Where the work is to be done mainly by means of horse tools the arrangement should be such as to give the longest possible rows, and straight outlines should be followed. The garden should be free from paths across the rows, and turning spaces should be provided at the ends. For hand cultivation the arrangement can be quite different, as the garden may be laid off in sections, with transverse walks, and the rows can be much closer for most crops. Horse cultivation is recommended whenever possible, as it very materially lessens the labor and cost of caring for the crops.

* * *

Location of Crops.—The second matter for consideration is the location of permanent crops, such as asparagus and rhubarb, and if any of the small fruits, such as raspberries, currants, and gooseberries, are to be planted within the garden inclosure, they should be included with the permanent crops. The area devoted to the hotbed, cold frame, and seed bed should be decided upon, but these may be shifted more or less from year to year or located in some convenient place outside of the garden.

Where there is any great variation in the composition of the soil in different parts of the garden it will be advisable to take this into consideration when arranging for the location of the various crops. If a part of the land is low and moist, such crops as celery, onions, and late cucumbers should be placed there. If part of the soil is high, warm, and dry, that is the proper location for early crops and those that need quick, warm soil.

* * *

Succession of Crops.—In planning the location of the various crops in the garden, due consideration should be given to the matter of succession in order that the land may be occupied at all times. As a rule it would not be best to have a second planting of the same crop follow the first, but some such arrangement as early peas followed by celery, or early cabbage or potatoes followed by late beans or corn, and similar combinations, are most satisfactory. In the south as many as three crops may be grown one after the other on the same land, but at the extreme north, where the season is short, but one crop can be grown, or possibly two by some such combination as early peas followed by turnips.

Where there is considerable choice in the location of the garden plot, it is often possible to select land that will require very little special preparation. On the other hand, it may be necessary to take an undesirable soil and bring it into suitable condition, and it is generally surprising to note the change that can be wrought in a single season.

* * *

Smoothing and Pulverizing.—After plowing, the next important step is to smooth and pulverize the soil. If the soil be well prepared before planting the work of caring for the crops will be very materially lessened. It is not sufficient that the land be smooth and fine on top, but the pulverizing process should extend as deep as the plowing. Some gardeners prefer to thoroughly cut the land with a disk harrow before plowing, so that when it is turned by the plow the bottom soil will be fine and mellow. After the plow the disk or cutting harrow is again brought into play and the pulverizing process completed. If the soil is a trifle too dry and contains lumps, it may be necessary to use some form of roller or cold crusher to bring it down. For smoothing the surface and filling up depressins a float or drag made from planks or scantlings will be found serviceable.

* * *

Fertilizers.—The kind of fertilizer employed has a marked influence upon the character and quality of the vegetables produced. For the garden only those fertilizers that have been carefully prepared should be used. Fertilizers of organic composition, such as barnyard manure, should have

Continued on Page 551

Deciduous Fruit Culture

BY J. W. MILLS, POMONA, CAL.

A GOOD CANNING PEACH.

What is accepted as Tuscan Cling has proven to be a valuable yellow canning peach for Southern California. It is prolific and a comparatively regular bearer. It differs somewhat from the peach of the same name that is grown in the north in that it does not have so strong a tendency to grow double. In the northern part of the State it has all the way from one to five pistils which means that many peaches to one stem. That makes expensive thinning. If thinning is not done by hand with this variety as it is grown in the north it is not worth much. Fortunately in the south it has not this tendency. This renders it easily thinned by using the shears, which is no longer an experiment.

Canners are very anxious to have the growers plant this variety and those who have grown it are satisfied with it.

* * *

ROOT CUTTING IN HEAVY SOIL

On a recent visit to the Imperial **district,** we were much impressed **with the** difficulty the farmers had in **starting** cuttings of grapes and figs **in their heavy** soils. Where the same **varieties** were planted on the light **sandy** soils in other parts of the valley **a** stand of 99% has been obtained. There was considerable complaint **about** failures on the heavy land and investigation showed that too much water **had** been used. Fig cuttings planted ten inches in the ground were so rotten at the lower end that they were slimy and soft, while five inches below the surface they were green and **in** some cases throwing out roots, and shoots were starting from a couple of buds beneath the surface. Cuttings should be completly buried in the Imperial climate as the tops dry out before the roots can start. The farmers see the dried tops and conclude that they need water while the soil at the lower end of the cuttings is still sufficiently moist to grow them. Water is almost invariably turned on when it is observed that the tops of the cuttings are getting dry and then they receive a shock that usually kills them unless they are already sending out roots.

Conflicting opinions were given regarding the starting of vineyards. Some claiming that it paid better to plant cuttings, while others said that roots were the best. The latter method seems the best in any climate. There have been about as many failures with rooted vines as with cuttings, but the great fault as it appears to us is the improper use of water. It is cheap and abundant and easily applied and it is a great temptation to use it.

Land that is formed by deposits from overflow, as the Imperial lands are, will be found to consist of layers of light and heavy soil and it is difficult to get water to penetrate to any great depth unless the layers are broken up. One farmer who has a good soil can sub-irrigate his land forty feet from his irrigation ditches. This proves that he has a layer of very heavy soil at no great depth. Where there is such a layer within reach of the subsolier, and there are thousands of acres of such land, the subsoiler would do much toward filling the lower soil with water and not put an excess into the upper or surface soil. This does not imply that it is best to turn up the soil to a great depth, but if the subsoiler were run at intervals of several feet in the bottoms of irrigation furrows, it would allow a given amount of water to wet underneath and lower down than when placed in the shallow furrows.

These ideas are expressed in relation to the care of fruits or cultivated crops and do not of course apply to grain crops. These are necessarily grown on a wholesale plan and the soil cannot be manipulated after the crops are in. Nevertheless, the amount of water that is being used will serve a larger area than it does now if more care and work is given in preparing for the seed bed. This is no theory of ours. Some of the best farmers in the valley tell us that they have proven it by actual results.

CODLING MOTH.

The Washington State Experiment Station has issued a bulletin giving the results of several years' work on the Codling moth.

The first spraying for the codling moth should be given after the blossoms have fallen from the apple, but before the calyx cups have closed. This spraying is the most important of all. Experimental tests show that normally it means a loss of one-third of the apples to omit this spraying. The object of this application is to place poison below the crown of stamens, as it is at this place that nearly all of the early worms enter. To do this most effectively it is necessary to rain down a rather coarse spray from above the blossoms until they are drenched.

Unless a period of cold weather sets in immediately, the second spraying should be given two weeks after the first. The second as well as later spraying should be applied in as fine a mist as possible. It is important to use as much pressure behind the pump as can be maintained, for the more pressure the finer the mist and the better the penetration. The third spraying should be given in general from the middle to the end of July; the fourth from two to three weeks later.

Practical tests have shown that the best substance at hand for treating the Codling moth is arsenate of lead. This material can be purchased under a number of brands, as: Swift's Rex, Eagle and Disparene. All seems to be good. Three experimental applicatoins of Swift's Arsenate of Lead at North Yakima the past year yielded 97 per cent of worm-free fruit, while four to ten sprayings with Paris green gave less in each case.

Arsenate of lead in paste form contains about one-third as much arsenic-content as Paris green. Accordingly one pound to forty gallons of water should compare in strength with one pound of Paris green used with about 125 gallons of water. One pound of Paris green to 125 gallons of water is known to be the most effective strength to use Paris green in combating the Codling moth. It was the 1 to 40 formula of arsenate of lead that gave the 97 per cent of good fruit in the Yakima tests. It will be noticed that this is considerably more dilute than recommended by the manufacturers.

ASPARAGUS POINTERS.

It is from the atmosphere chiefly that the plants obtain the combustible part, while the 5 to 10 per cent of the incombustible matters or ash is obtained exclusively from the soil, although the ash constitutes so small a part of the entire plant, yet the elements composing it are indispensible, for without them the ingredients obtained from the atmosphere could not be taken up by the plant.

The three elements that are the most important are nitrogen, phosphoric acid and potash. In many instances, either from one-sided cropping or natural deficiency, one or other of these elements may be markedly deficient. Under such conditions plants fail to give the largest possible returns, and need special fertilization.

Asparagus is one of the crops which makes an extremely heavy draught on a soil, and one which responds readily to rational feeding.

Practically all of the experiments recorded for the use of fertilizers on this crop have shown enormous returns from the judicious use of fertilizers.

The preparation of an asparagus bed requires the outlay of considerable money, but the planting is expected to last for fifteen to twenty years, and consequently all the work should be done in a most thorough manner.

The soil should be a sandy one, or a light loam, warm and deep. It can hardly be made too rich for this crop, some expert asparagus growers using 1000 pounds and more of fertilizer per acre. The object of such heavy use of plant food is to force a rapid growth of large, crisp stalks, which can only take place when growth is unchecked at any stage.

If the object is to grow white stalks, furrows should be opened, some four feet apart and at least eight inches deep. Plants should be set twelve inches apart in the row and arranged so as to be in a natural position. At the outset the roots should not be covered more than two or three inches, but as the shoots get older the furrows may be gradually filled. Clean culture is an essential for success.

All fertilizing should be done just before the plants begin to shoot. While stable manure is used very heavily yet there is often much trouble from weeds, thus introduced into the soil.

A fertilizer combination that is suggested is:

Dried blood	300 lbs.
Bone superphosphate	800 lbs.
Muriate of potash	300 lbs.

Of the above mixture from 800 to 1000 pounds per acre can be used. Whatever the source of the plant food the nitrogen and potash supply should be very liberal. Commercial asparagus beds are usually cut for about three months, and this long period of removal of shoots reduces the vitality of the plant, so that unless the plant is stimulated and fed, the succeeding crop is likely to show the effects of heavy cropping. Fertilizers, however, cannot take the place of tillage. They can only supplement it. This is a truism which holds for asparagus as well as other crops and should be heeded accordingly.

In cutting asparagus the knife should be so manipulated as not to injure other shoots as each injury so inflicted reduces the profit from the plant. The shoots are then bunched and tied, and the butts cut off squarely with a sharp knife.—George Wright.

SALSIFY.

This vegetable is coming more and more into use, and every one should give it a trial. It is easily grown, which fact is not generally known. The seed is sown in early spring in drills. The plants need thinning out, should they come up thick. They are not hurt by frost, and can remain in the soil all winter if desired, and then be dug out in spring. Some dig them late in the fall and store them in the cellar, or in a trench outside, to be used at will throughout the season. It is sometimes called the oyster plant, from its resemblance in flavor to that of the oyster.

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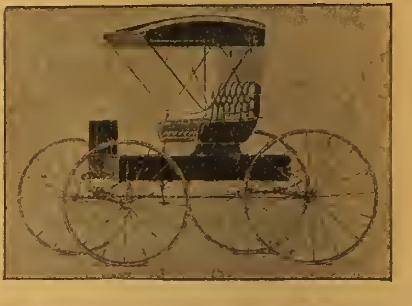

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Practical Farm Science

BY PROF. A. J. COOK

CHUNK HONEY.

This is an article that we seldóm see now in any of the best markets of America, yet in the old days, even of fifty years ago, it was no uncommon occupant of the best marts of our land, and that in even the large cities. By chunk honey we mean irregular pieces of comb honey cut from the broad frames. It has little to recommend it and much that should relegate it to the shades of the long ago. It is cut from any portion of the hive in irregular shapes, and has no attractiveness of form. Again it is always more or less travel-stained and so is decidedly without color beauty. Again it will generally contain some, often much, pollen, or bee bread, and so will, if carelessly eaten, give the bitter taste that makes pollen so distasteful. In America we demand that our table supplies look well and often are as anxious for this as that they taste well. I think that we often put appearance ahead of real excellence, else why do such apples as the Ben Davis win purchasers, and hang on to production? We love to set before our guests viands that captivate the eye, and are hardly less eager that our own dear ones of the family shall have that which pleases the eye no less than the palate. America has no superior and I believe few rivals in her skill in the makeup of the table. The clean spread, artistic arrangement, usual bouquet of finest flowers, and last but not least, the beautiful table articles, which often look as well and sometimes better than they taste, make the American table a thing of beauty, and I hope usually joyful. Thus it is that the comb honey of America in the elegant sections, white and clean as the fresh fallen snow, pollen-free, and so always sweet and delicious, captures the aesthetic American housewife and is popular, as it deserves to be, for it adorns the table no less than it pleases the palate.

In beautiful Berlin, we see this chunk honey anywhere and the beautiful sections very rarely indeed. And yet this ugly chunk honey sells for as much here as the incomparable sections bring in America. The Berliners show most commendable taste in their architecture and landscape gardening. The city is full of palaces, indeed, it might be said truthfully that the entire city is a group of palaces. The parks are also very numerous and of wonderous beauty. They show the real essence of beauty as seen in our great forests and everywhere, scattered thickly throughout the wide streets, we see lawns, shrubs and flowers arranged as by master artists, with circles, ovals and squares, generously distributed, and so elegantly planted that one can but think of the city is a veritable fairyland. The flower stores are also exceedingly common and full of the rarest and most exquisite bloom. Here we can learn of the Berliners. They surely have great taste as seen in their love of flowers and art. Yet in the table and food products, I can but believe that we are in the lead. In all these respects it is most wise that we should work for the beautiful. Let us, if possible, improve still more our wonderfully beautiful section honev, and never more offer to the trade the ill looking and unsavory chunk honey that was the all of our fathers, we do not need to say grandfathers, and which is still to the front in many leading European cities.

There is just one recommendation for chunk honey. It can be secured with little work and hardly more of thought. But the day when success comes with no exercise of brain is long since past. We of America may take pride in the fact that as a people we lead decidedly in thoughtful enterprise. In the exercise of brains to secure the most beautiful and the best in every desired quality, we not only add greatly to our gains financially, but we make our manual pursuits a fascinating pastime rather than unattractive, irksome drudgery.

* * *

INTENSIVE AGRICULTURE.

I came to Europe expecting to study intensive agriculture. I had been led to believe that in method and production we of America were far in the rear. Yet I am fully persuaded that in the citrus orchards of California, especially the best conducted ones, and they are certainly in very generous proportion. we have a system of intensive agriculture rarely equalled and certainly unexcelled in most if not in nearly all Europe. In our deep thorough cultivation we far excel England and France, though in this I believe we are still behind much of Germany. Though Germany gave us the idea of nitrification of the soil bv bacterial germs, and the principle of soil inoculation, that we may gain the rich stores of nitrogen from the air, yet it is our own scientific experts that have perfected the method of applying this information, and today our growers lead the world in the intelligent use of fertilizers and in the application of that great discovery in modern agricultural practice, the enriching of the soil by the free planting of legumes that we mav win to our aid the millions of bacteria that constantly work to enrich our soils with the ever necessary but costly nitrogen. In our shipping and the handling of our fruit, we are surely way in the lead, else our splendid California fruits would not be in all Europe's best markets, and as universally praised as "the best" by the dealers. In skill and neatness of pack we can teach those of any and all other countries.

Yet in our general agriculture, as for example, in the beet field, we find in Germany a condition much in advance of our own. Here they feel that the land is too scarce and too necessary to have any lapse in production, and so we find the vacant places in rows, so frequently in evidence in our own land, practically wanting in Germany. As I showed in a former article, this may be due in part to a more generous use of seed, better tillage, and especially deeper plowing and the entire curtailment of weed growth. They also find that they must use very generous applications of commercial fertilizers, and this practice is almost universal in the German beet fields. In all these matters our beet growers will, if they are wise, pay most earnest heed.

In one respect—in this intensive line—we are immeasurably ahead of all Eurone. Our soil tillers generally own the land, and are almost always alert, intelligent, and often well educated. Thus the men who really do the work are thoroughly informed as to the latest discoveries and the best practice of the day, and are in condition and way to still improve in greater reach all the various manipulations and methods of farm management. In the intelligence, thrift and enterprise of our agricultural population we are away ahead of Europe, and in this I believe is our best hope and greatest glory as a people and a nation.

* * *

STREET IMPROVEMENTS.

I gladly note that there is a great improvement all over California in the matter of tree planting in cities and along the roadsides. Surely this is timely and wise. We can hardlv plant too many trees. These should be carefully selected. We must have those that will thrive in our climate, should select the most beautiful species and I believe are most wise in planting but one specie on a single street. Eurone, even though so old, has in many sections more trees than we can see in large portions of America. We may well believe that the ample rainfall of Europe is largely due to this generous provision for tree growth. Europe may almost be said to be one great park so common and numerous are the growths of fine trees. It is probably true than in no way can we help California so much as to foster this habit of tree planting. As we ride through most sections of of Europe, we seem to be in or near dense forests most of the time. Would it not be wise to form societies all over our State which should make it their pleasure and duty to arouse interest in this question of more trees? This will not only make the State more beautiful but it will tend tremendously to strengthen us where we are most weak. More trees mean more rain. T. P. Lukens in his generous, unselfish interest in this matter has wrought grandly for our State. We rejoice that his generosity and work has won the appreciation of the government and trust that he is in way of doing even more to reforest our mountains. We must not be asleep regarding the importance of far more numerous and extensive forest areas.

"Beside the Bonnie Brier Bush" has attracted the attention of the world to the Ayrshire rose of Scotland, "which bloomed in the gardens of Drumtochty" where the scenes of this gem of idylic literature were laid. The Ayrshire and its closely allied Dundee Rambler are pure white in hue, exceedingly hardy and the foliage is shining green, similar to our Cherokee rose.

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California Horticulturally

END OF THE PEAR BLIGHT WORK.

On the completion of their work on pear blight in the northern part of the State, the corps of experts under direction of Professor Waite were withdrawn, but Professor Dean B. Swingle was left for the purpose of checking up the work and reporting on the efficacy thereof. Prof. Swingle has now completed his work and left for Washington on May 30th. He reports that, as a rule, the work has been very thoroughly done, and in the orchards where it has been so done, there is very little showing up, and it is his opinion that another year's 'strenuous work, followed by careful watching on the part of the horticultural commissioners hereafter and the removal of the blight as soon as it is seen, will keep it out of our pear orchards and save this great fruit industry to our northern counties. There are still some few orchards in some of the counties that have not been treated owing to obstinacy on the part of the horticultural commissioners, and these are threatening dangers where they exist and the blight has shown up in them to an alarming extent. A special appropriation has been made in Washington for the purpose of continuing this work through the Department of Agriculture next winter, and it is probable that some stringent laws will be enacted by the coming legislature to reach recalcitrants, and means, may be had by which the disease may be thoroughly checked, if not eliminated in the northern pear orchards.

* * *

NEW INSECTARY COMPLETED.

As stated a short time since, the insectary of the State Horticultural Commissioner at San Francisco was very badly wrecked by earthquake and I notice that some papers speak of it as being a total loss. This is incorrect, for while the loss was very great, enough has been saved from the wreck to get a new start and in a few months there will be an ample stock of parasites for distribution again.

A temporary insectary has been erected at Sacramento and put in the charge of Mr. E. K. Carnes, who is now busily at work along the old lines. Conditions here are better for the propagation of insects than they were in San Francisco and it is probable that some effective work will be done. It was arranged some time ago to build a good, commodious insectary on the capitol grounds, but serious objections were raised to it as it has been determined to put up no more buildings on these grounds, but rather to remove those already there and convert them wholly into a park. For this reason the proposed insectary could not be built, and the one now in use is a temporary structure which will be used only until better quarters can be provided. It will answer all purposes, however, and the supply of beneficial insects will shortly be sufficient for all demands. All applications for beneficial insects should be addressed to Sacramento.

* * *

UNSEASONAL AND INJURIOUS RAINS.

Heavy and unseasonal rains have fallen in the upper part of the state, doing much harm and little good. The hay crop, which was being cut in many sections and in all parts was ready for the sickle, has been very greatly injured. Late grain may be helped a little, but the early grain, which was in the milk, will not be benefited much, if at all. Cherries have been seriously injured by the rain as this crop is now ripening rapidly, and the rain will cause the fruit to crack to a large extent. The cherry crop has turned out very well and heavy shipments are now being made. Early apricots have already appeared but the crop will be a light one this season, and heavy winds have whipped off many of the young apricots.

* * *

ORANGE GROWING IN SAN FRANCISCO.

I noticed a statement in a Riverside paper a few days ago that no navel oranges had ever been grown within a hundred miles of San Francisco. I have gathered and eaten navel oranges from trees in the city of San Francisco itself. An old sea captain by the name of Partridge, bought some property on the bay within the city of San Francisco, and turned his attention to horticulture on a small scale. Among other things, he planted several navel orange trees, and I have visited his place and picked the fruit from them and the trees did well and produced a fairly good article of fruit. In an orchard washed by the waters of the bay, while in sections all around the bay in Alameda county, Santa Clara county, and San Mateo county, navel oranges can be found quite frequently in full fruit. I have seen a number of these all through San Mateo county in full bearing and giving good results. It is true that the fruit is not so good as that grown in Southern California or in the interior valleys, nor is it grown on a commercial scale, being grown principally for a curiosity, but for all that, the navel orange is grown in and around San Francisco and a fairly good article is produced.

* * *

LOCUSTS APPEAR AGAIN.

Reports are coming in from portions of San Joaquin county to the effect that the grasshoppers have already made their appearance, and the annual grasshopper scare is being gotten up again. So long as we have any uncultivated foothill sections so long will we have swarms of grasshoppers every year in some part of the state. The gently sloping, gravelly foothills of the mountain ranges, which are practically worthless for anything but pasturage, and are not very good for that, form ideal breeding grounds for the grasshopper, and so long as these are allowed to remain uncultivated, there will be swarms developing, and we will read the same story each year.

These swarms do considerable damage to the area immediately aligning their breeding grounds, but are not nearly so serious as the Rocky Mountain locust of the East, and it is to be regretted that so many of our newspaper accounts are so florid in their description of them that one would think that the entire agricultural resources of the state were about to be destroyed by grasshoppers

The truth is, that we have swarms every year; that they do not usually appear two years in succession in any one location; that the area of destruction is comparatively limited, and that there is no danger whatever to be feared by the state at large from an invasion of grasshoppers or locusts. It is well, however, to reduce these swarms and destroy them to as great an extent as possible wherever they appear, and this may be done by burning over the section where they are breeding, while they are in the hopping stage and before they acquire their wings, to capture them by means of a machine known as a "hopper-doser", or to poison them with the bran, arsenic and molasses compound. Any of these methods will destroy them in large numbers, and, of course, the greater the number destroyed, the smaller the future swarms will be.

We have in California a parasite—a tachnid fly—which attacks them in the flying stage and reduces them very materially, but, unfortunately, there are always enough left for the future crop. However, no one need fear an attack of grasshoppers outside of the immediate limited area adjoining their breeding grounds.

* * *

THE SUMMER SCHOOL AT BERKELEY.

The special rate of one fare plus two dollars for the round trip to Berkeley, which was made by the railroads on account of the National Educational Association Convention, will still be available to the students of the University of California Summer School, which opens June twenty-fifth and ends August fourth. The tickets will be on sale at all stations June tenth. Prospective students will pay full fare to Berkeley and take a receipt for it. Upon certification by the recorder of the faculties that they have been in attendance at the Summer School a return ticket will be sold to them for two dollars. The return trip may be made at these special rates any time up to August thirty-first. The time limit of the tickets gives one ample opportunity to study the unique situation in San Francisco either before or after the Summer Session. There are plenty of accomodations in Berkeley, and board and lodging may be had at very reasonable prices. It would be well, however, for students to write to Recorder James Sutton, California Hall, Berkeley, California, and arrange to have reservations made for them. The Summer School will be conducted along exactly the same lines as though the San Francisco calamity had not occurred and from present indications the attendance will exceed that of any previous year.

FARMERS NATIONAL CONGRESS.

The meeting of the Farmers National Congress at Rock Island, Ill., next October, opening the 9th, will afford an opportunity for a most pleasant outing, to say nothing of the valuable program to be presented. Rock Island is beautifully located at an attractive point on the Mississippi river at the foot of Rock Island rapids. Aside from the fine scenery in the city and immediate vicinity, it is surrounded by an ideal agricultural country and is the site of improved dairying industries. At this place is located Rock Island arsenal, the largest in the world, and Back Hawk's watch tower, famous in Indian history and legend. In addition there is an abundance of parks and drives. The Western and Central railroad associations have made a rate of one fare plus two dollars for territory. The Trunk Line association will charge a fare and a third through its territory—Pennsylvania and New York. Other association have made liberal concessions. An excellent chance is offered for an exceedingly delightful, cheap and instructive excursion. Pay full fare going and take receipt from your local agent. J. M. Stahl, Chicago, Ill., president; Geo. M. Whitaker, Boston, Mass, secretary.

The Pomona Fruit Growers' Association, having discontiued fruit drying, have on hand 9000 drying trays, 500 picking boxes, and two graders which can be had at a great bargain by addressing R. D. Russell, corner Phillips and Ellen Sts., Pomona, Cal.

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With the Citrus Growers

BY J. W. MILLS

GUM DISEASE.

The appearance of gum disease on orange trees should be quickly followed with some treatment that will check it. There have been various recipes for washes, those most highly recommended having some carbolic acid in the mixture. A good one is equal parts of quick lime and sulphur by weight mixed well and enough crude carbolic acid poured over it to slack the lime and leave the mixture thin enough to apply with a brush. The slacking of the lime with the sulphur creates sufficient heat to thoroughly incorporate the two, thus giving a double value to the fungicidal properties of the wash.

Some four or five years ago, Mr. S. A. Baggs, horticultural commissioner of Tulare County, published a recipe which met with high favor in his district. It was a solution of equal parts of beeswax and resin, boiled together and applied hot with a paint brush.

The precaution always given in preparing the tree for the wash is to prevent the spread of the disease by carefully collecting the bark and chips of wood scraped from the diseased parts. All the abnormal tissue should be cut out and burned. It will be noticed that there are always granular particles that are thrown out from the bark. This bark is green where the disease is first making its appearance but there will be small openings that penetrate into the wood beneath the diseased tissue and into the healthy part. These should be opened up and the bark carefully scraped so that the most remote parts will receive the wash. The green bark should not be removed as that would leave an ugly wound that would very much weaken the tree.

If the disease is contagious as it very likely is, an application of the wash before scraping would disinfect the most of it, especially if the scraping were done while the wash is wet.

* * *

CITRUS FRUITS ON THE DESERT.

We always supposed that citrus fruits would have a hard tussel with the wind and frost one hundred and fifty feet below sea level where the thermometer ranges or is supposed to range from 130 to 15 degrees.

However some Riverside capitalists have recently planted 75 acres after having demonstrated that they could grow early oranges there. Later we discovered at Brawley, in the heart of the desert, young orange trees and also bananas growing and appearing to be in congenial surroundings. The bananas are now in bloom and show no ill effects of having passed through the winter in the open, except that the leaves were badly tattered by the wind. The owner is now growing a eucalyptus hedge around his plantation and is spreading out in the banana business, having planted all of his offshoots. Last summer his only bearing bananas tree matured fruit three inches long but this was lost in a gale that took his tree along down the valley. We were somewhat surprised to see such tropical vegetation live through the winter. We were told that tomatoes were harvested all winter in the open but that they do not bear during the hottest part of the summer.

All these features present an encouraging prospect for early oranges, earlier than the northern part of the state can ever hope to produce, yet it has not been demonstrated to a certainty that oranges can be profitably grown there on a commercial scale. There will no doubt be many mistakes made and many failures, still these things will be demonstrated one way or the other in much shorter time than it took to settle such questions in the acknowledged citrus belts.

* * *

PRUNING CITRUS TREES.

From now on is the time of growth for citrus trees and they will grow so rapidly that the shoots will bend right over with the superabundance of large heavy leaves. Where there is a tendency to this it can be stopped by pinching the top of the shoot. Especially is this the case with lemons, which require constant watching to prevent getting topheavy. Do not prune severely in the height of the growing season, but rather wait until later on in the fall or early spring. Where trees have been rebudded they will require constant attention all summer to get the growth where wanted. If the trees have been large and been subjected to the beheading process, all growth must be kept off except what comes from the new buds, and the object should be to get a good growth of healthy wood that will be well matured before winter.

SOIL AIR.

A proper circulation of air in the soil is just as important as any other factor of plant growth. Nearly half of the volume of ordinary soils is occupied by air spaces. The air spaces in the soil wind in and out between the soil particles, just as they do in a pile of larger stones. If the layer of water on the surface of the soil grains becomes so thick as to stop the air passages here and there the soil is then too wet for most crops and needs drainage. Plants have no special breathing organs, the oxygen required in their breathing finding entrance all over the surface of the plant. Plant roots must therefore be supplied with air, and hence the soil must be porous enough to permit of free circulation of air. A good supply of humus and proper tillage will accomplish this result in clay soils. Sandy soils are usually too porous, needing humus to help them retain water.

Another reason why air must circulate freely in the soil is that large quantities of oxygen are required to insure proper decay of organic matter to supply plant food. Also, carbonic-acid gas is produced by the decay of organic matter, and this must escape easily to make room for the atmospheric oxygen needed in the soil. The movement of air in the soil is frequently shown by the bubbles which appear at the surface of the soil just after a hard rain. As the water soaks into the soil it drives the air out, and bubbles may be seen at the surface if water enough is present to form them.

One of the most important objects of plowing is to loosen up the soil and mix fresh air with it.

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The Ornamental Garden

BY ERNEST BRAUNTON, LOS ANGELES, CAL.

CARNATION CULTURE.

Being a surface feeder a light sandy loam is the best soil, although if thoroughly mulched, any ordinary garden loam will produce good bloom. Use decomposed cow manure Lighten your soil well before planting and give a thorough surface dressing of cow manure after planting and twice a year thereafter. Do not stir soil deeply, but lightly rake over the surface after watering. Being a surface feeder, this plant requires an abundance of water, yet requires good drainage.

Planting Season.—The months of March, April and May are the best in which to plant thrifty young plants, which should have been rooted during October, November and December. These plants will give excellent bloom during November and onwards for one year, and then usually deteriorate.

During the fall and early winter a strong young field plant carefully removed to the garden, will keep on blooming and growing luxuriantly. Do not take an old pot-bound plant at any time—you can easily detect it by its thin, spindly growth.

Keep the newly set plants well cut or pinched back, not allowing flowering stems to form earlier than October.

In picking bloom do not hesitate to cut with a long stem, the plants do better when freely cut as their tendency is towards over productoin of blossoms, rather than otherwise. If extra large blooms are desired disbud all but the terminal flower bud upon each stem.

Fertilizers.—For all general garden purposes nothing will equal good cow yard manure, put on twice a year to the depth of about two inches and gradually worked into the soil. Once each year an appleiation of wood ashes will be found highly beneficial. If in a friable, well-drained soil, carnations will use an abundance of plant food.

FARMERS' YARDS.

For the farmer's yards, I do not advise hanging baskets, for they require a great deal of care. If you want plants that are small, plant them in the ground and not in mid-air, put them in the earth where you won't have to water them so often. And instead of having hanging baskets on your porch, grow vines.

In a climate of this kind we want plants that are best adapted to it. I know what you have to contend with and your want plants that are drought-resistant. You must plant petunias and California poppies. You must cling to the native plants of all sorts. The matter of the flower garden in this clime is one for you to work out yourself. In the city. gardening is more favorable to a larger range of plants for there you have better architecture, curbed streets, etc. But out here in the country, you need the softening forms of trees and hedges to hide the angles and defects in architecture. Have everything in sympathy with its surroundings. Don't make the mistake of having things too exact; don't lay out flower gardens in little beds, but have little masses of flowers dotted here and there. Do not fill up your land in a conventional manner, but so arrange your flowers and flowerbeds, so that it will look natural, and as though the hand of man had not been there at all.—E. B. at Upland Institute.

PRICKLY PEAR CACTUS.

Expermients have been conducted by the Queensland Government to investigate the most satisfactory method of eradicating the prickly pear upon land which had been invaded by the persistent growth of the plant. The ground selected was very steep and covered with an almost impenetrable mass of cactus. The men employed were protected against the sharp needles of the plant with leather leggings, and were armed with specially constructed mattocks with which they chopped the plant to the ground. The leaves and stem were cut into small pieces and sprayed with a solution of sodium arsenic. Under this treatment three or four days after the applicatoin of the spray the plants became brown, in which withered condition they soon rotted and disintegrated. The spray appears to have had no deleterious effect on other vegetation, although the roots of the cactus were so thoroughly destroyed that some months after the experiment no new growth was observed. The spray used was composed of four pounds of white arsenic and three pounds of washing soda, boiled for half an hour in one gallon of water. Of this concentrated solution about six ounces were used to a gallon of water for spraying.

INSECT POISONS.

Garden insects are a great pest and many and various are the methods employed to get rid of them. We give below three recipes for poisoning these pests. The writer has used, at different times, all three for the destruction of wood lice or "sow bugs" in greenhouses.

To a pint of cornmeal, add enough brown sugar to sweeten, mix well together and add one tablespoon of Paris green. Moisten a little with water, just so it will hold together. Place the mixture about in small quantities wherever the bugs may be.

2. Take one pound of Paris green one pound of ordinary flour, one quart of well-slaked lime. Mix well together and diffuse with the powder bellows.

3. Mix Paris green with powdered sugar until the sugar shows a greenish color. Distribute it in the evening (in little pinches) near the hiding places of the sow bugs, and if all is eaten next morning, repeat it until all the sow bugs are destroyed.

STREET TREES.

This is a subject of vital importance to everyone in the neighborhood who is interested in the public improvement. You have in Euclid avenue one of the grandest avenues that you can find in Southern California, and yet you are frittering away your lives without doing a thing to it that would make it of greatest charm to the tourist. If it was planted in the same manner as the streets in Riverside, railroads would make it a regular stopping place for tourists to see it. The pepper trees should have vines and plants put around. interspersed with poppies and geraniums to lend a dash of color. Geraniums are not given their proper value. It is the geranium, pepper trees and palms the tourist wants to see, and he will go where he can see them.

In Riverside, the streets are undergoing wonderful transformations. Miles and miles of poppies and sweet peas are being planted and the streets beautified. The people there will not sell an acre because they know what an impression this beautiful landscape will make upon the people. The tourist will go there.

You have nothing of landscape beauty to show him. Fix up Euclid avenue and then the other streets, and you will have, as I said before, one of the grandest avenues in Southern Calfiornia. It will be of interest to the toursit and will bring him here. If you will all do your share in the matter of co-operation, you will soon find that the tourist will come and settle amongst you.—E. B. at Upland Institute.

THE GRASS FAMILY.

That wheat, corn, oats, barley, rice, etc., are grasses as much as the blue grass of the lawn, is a matter of general information perhaps too common to mention, but it may occasion some surprise to find the bamboos close to blue grass, and closer to fescue grass. Bambusa guada attains a height of sixty to a hundred feet and the spaces between the joints are filled with pure cool water. A few clumps of this grass would make a pretty good water system for a small family.

PISTACHIO NUTS.

The favorite confection, which is also much used in pharmacy, is the seed of the fruit from Pistacia vera, a tree of Persia and Syria. It is cultivated throughout the Mediterranean region and has, from far back, been much used in the East to perfume the breath, the resin of the tree even exceeding the nuts in aromatic properties. This resin is obtained by incisions of the trunk and is called mastic.

GROWING FERNS.

In such an equable clime as ours ferns should play a more prominent part in the decoration of the home, whether out of doors, in the living rooms, or the heated conservatory. The most common mistake made in handling them is the failure to provide proper drainage and for this reason we advise raising the fern beds at least six inches above the common level.

FREE SEEDS.

Nothing that has been before congress this session, not even the statehood bill, has evoked such a show of passion as the 1-cent package of seeds. The other day Congressman Lilley, of Connecticut, had on his desk a big bunch of letters from farmers of his district, replies to some of the 12,000 letters he sent out trying to learn the sentiment of his district. "You're a good fellow, but your seeds are no good," one man wrote. "I don't want the seeds," another said, "but please send me an Ayrshire bull and $25,000." "If the government has any more seeds to send me," said another, "I'd prefer to have their value in cash or postage stamps."

MARECHAL NEIL ROSE.

This beautiful rose, the first of its class (appearing in 1867), was so named after Marechal Neil, a distinguished French marshal, who was born in 1769 and shot as a traitor in Paris in 1815. He was a prominent figure in the army from 1787-1815, was made peer after the restoration of 1814 by Louis XVIII, but deserted to Napoleon in a few months and commanded the Old Guard at the battle of Waterloo. He was afterwards tried by the House of Peers, condemned and executed.

When planting trees and shrubs on the lawn for permanent growth, keep in mind the habit of the trees. Make the tops smaller than the roots of trees that are transplanted. Remove all broken roots when the trees are set. Cut broken parts off with a sharp knife.

For the hottest. driest place in your garden, get a plumbago, either the blue or the white. It will stand any possible heat or drought in this section.

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In the Vegetable Garden

BY ERNEST BRAUNTON

THE FARM GARDEN.

If the garden is planted all in a day, to get the disagreeable job out of the way, it is probable that only one or two species of plants will do their best. Some will have been planted too early and others too late.

For best results in garden making each kind of plant should be out at the time when conditions are best suited to it. Peas, parsnips, spinach and some other species should be planted as soon as the soil can be worked in the spring after the hardest winter rains are over. Seeds of all these will germinate, and even make stronger growth, when the soil is only a few degrees above freezing. If we have frosts more or less after they are planted no harm is done.

Other plants like beets, potatoes, carrots, etc., have a larger heat requirement and should be planted a little later, or at least later than the first mentioned list. They will not endure well if put out on the days when the ground is still being frosted, but they should be planted before the soil gets too warm.

Corn, beans, melons, cucumbers, tomatoes and many others require a warm soil and time will be gained if they are not planted until the soil is well warmed up to a considerable depth. If put out too early the seeds are liable to decay in the soil. Even if the plants do grow they will become stunted by the cold and will not develop into good plants. It saves time to plant these warmth-loving kinds after the soil is warm.

Some species need a great deal of heat. These are lima beans, okra or gumbo, egg plants and some others. They should be the last vegetables planted. Still other species should be planted at intervals so as to get a succession of vegetables for the table. Most kinds which grow quickly may be planted in succession nearly every month in the year. Radishes, beets, lettuce, peas and many others are succulent. Seeds of these may be planted every few weeks, so as to have them tender nearly every month.

SETTING CAULIFLOWERS.

The rows are three feet apart, and the plants are set about eighteen inches distant in the row. It requires more caution to set the plants out in time, if kept in the plant bed too long. The plants should be set out as soon as they are large enough to handle easily. For this vegetable it is better to make three different sowings, about ten days apart, so as to be sure to have plants in good condition when weather is favorable for transplantings.

The vegetable must be treated more nearly like early cabbage than like the later. The soil needs to be richer and deeper than for cabbage. Plants must not be allowed to be checked in their growth at any time, as they are liable to run to seed, just as they are when allowed to remain in a 'hot bed too long.

DESERT ONIONS.

The Bermudas in the Imperial and Coachella valleys are later than was expected and later than was the case last year. To secure the best prices, the Bermuda onions should be on the market in March or at least early in April. The growers next season should plant seed in September, if possible, or even earlier. Doubtless it will pay them well to experiment until they find they can put onions on the market before the greatest part of the Texas crop is sent out. This they have not yet succeeded in doing.

.. TO POISON CUTWORMS.

Thoroughly mix, while dry, one pound of Paris green and fifty pounds of wheat bran; make moist but not sloppy, by adding water in which a quart of cheap molasses has been dissolved. Place this mixture in spoonful piles where the worms are working. It attracts the worms from the plants.

HOW THE GARDEN PAYS.

It is certainly true that the garden pays. It pays because it provides healthful, out-door exercise, because it supplies the table with toothsome vegetables and because it improves and beautifies the home and makes life worth living.

CHINESE CABBAGE.

Cabbage is a most important vegetable in the estimation of the Chinese but it is not our cabbage nor any of its many forms, such as cauliflower, broccoli, kale or Brussels sprouts, but oriental species, now known by botanists as Brassica chinensis, B. petsai and B. juncea.

These cabbages are much used as an addition to soup and meat stews, evidently being added at the last moment, as they are so lightly boiled that the green color of the leaves and the crisp, pungent mustard-like flavor are well retained.

KHAMA MELON.

This curious little stock melon came from the Kalahari desert in South Africa, and in its native country is said to grow well on exceedingly arid soil. At the Pomona substation, without water, on sandy soil, it yielded at the rate of twenty-two tons to the acre and cows and horses ate them readily. California reports are various.

FENUGREEK.

This is an old plant of the Mediterranean region. It is of the clover tribe: an annual, which under favorable conditions, produces a heavy weight of stem and foliage. It is used in the old countries for hay-flavoring; the seed also has aromatic qualities and special uses in veterinary medicine.

COMMERCIAL PEPPERMINT.

The yield of peppermint to the acre varies greatly according to conditions. The yield of oil runs ten to fifty lbs. to the acre, averaging 15 to 25 lbs. The chief producing section is southern Michigan, with moderate quantities of oil also distilled in northern Indiana, and one county in New York. Domestic output is obliged to compete with Japanese oil.

Onions may be grown on high ground in a dry season by the new culture, while under ordinary culture, it would be a complete loss of seed, time, money and use of land.

MAGNEROSA TOMATO.

The New Jersey experiment station has a tomato, Magnerosa, which is a cross between Ponderosa—a standard, very large variety—and Magnus—a fine pink fruited sort. The cross has been carried through three seasons and is considered very desirable in form and quality.

WATER CRESS.

Water cress may be successfully grown on ordinary garden soil without the aid of running water. When water is laid on from pipes, water cress will thrive as well as in a running stream. To cultivate on ordinary soil, prepare a bed of good mould about six inches deep. Smooth and water it in the evening, and next day reduce the soil to a fine tilth. Mix the seed with fine sand, and sow as evenly as possible, and cover very lightly with a thin layer of mould. Press the seed down, water, and cover with matting. The plants soon grow; by and by they flower, when a new covering of mould is given them, leaving the plants about one inch above the ground. Then water freely. Ten days later shoots will appear springing from the roots, which, when two or three inches high are removed and pricked out three or four inches apart in a new bed. A fortnight later the cress will be six inches high, when cropping may begin.

CABBAGE SOILS.

Select a well-drained and comparatively light soil and give it plenty of manure, at the rate of seventy-five tons to the acre, if possible. The soil should be thoroughly prepared, and to a depth of at least ten inches. The ground occupied by this crop can be used for a succeeding one, immediately after harvesting. Where the land is very valuable, many also grow radishes, spinach or lettuce between the rows, and by so doing, make these catch crops pay for the manure used.

DISEASES OF THE TOMATO.

In Farmer's Bulletin 220 of the United States Department of Agriculture, the following information and suggestions are found:

Leaf spots and leaf mold, two fungous diseases, of similar nature, are marked by the appearance of small, round or irregular spots on the leaves, causing them to turn and finally die. Both are easily prevented by spraying with Bordeaux mixture. The application should be given soon after the plants are transplanted, and be repeated at intervals of ten days through the season.

Fruit rot is combatted with more or less success by training vines to admit light and air, together with the destruction of all diseased fruits, to prevent the spread of infection.

Wilt, principally a Southern trouble, is due to three distinct parasites. The Fusarium wilt, the most prevalent in southern Florida, compels rotation of crops. Tomatoes in this section should not be planted on the same land oftener than once in four or five years. The Eclerotium wilt attacks tomatoes and many other vegetables in the Gulf States and requires rotation of crops and the destruction of diseased plants. In the autumn dead plants and decaying matter of all kinds should be removed from the garden and burned. The bacterial wilt, the most common tomato disease from northern Florida to Maryland, is spread mainly by leaf-eating insects though the infection probably remains in the land as well. Spraying, with Bordeaux mixture and Paris green, together with the destruction of diseased plants, as soon as observed is advisable.

Root knot is characterized by the formation of irregular galls on the roots of infected plants, due to the invasion of minute nematodes or eelworms. Most garden crops are attacked by this disease, but tomatoes are especially susceptible. They should not be planted on infected ground. Rotation with crops that will not harbor the worms tends to free the land from this disease. Nematodes are not troublesome in the field except in the south.

Western blight or yellows, prevalent in the Rocky Mountain States, is due to a cause not yet fully known, though prabably connected with unfavorable soil conditions. These should be improved by drainage, fertilization, cultivation and irrigation, and great care should be used in transplanting not to injure the young plants.

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The Coming Harvest.—The California farmer, no matter what his crop, will doubtless have abundant cause to rejoice when this year's crops are garnered. The outlook is most excellent for heavy crops in all parts of the State. The grain harvest, now upon us, is calling for all the available help obtainable, with the supply far from meeting the demand. Farmers in Centra California are already complaining of the shortage of labor

The San Francisco disaster will doubtless work to the injury of the farmers thereabout because of the great amount of labor needed for reconstruction and the allurements that city life has for the average working man. In this day of short hours, with improved machinery to relieve the workers from the heaviest part of the toil, it is little wonder that the farmer is short of labor. We still have too many farms where the workday begins at 4 a. m. and ceases only with darkness. This "workday" has come down to us from the "good old days" sentimentalists are so fond of ranting over. When the farmer will grant the same hours, pay, quarters, etc., that the ordinary laborer obtains in the city, then, and not till then will farm work prove attractive. We are aware that many farms have ideal conditions but there still remains many rural employers who consider that sixteen hours constitutes a workingday.

* * *

The Fortunate Farmer.—It has been no late discovery, that the farmer is more fortunately situated and should be more content than his neighbor of the city or town. Long years ago the poet, Alexander Pope, penned the potent truth:

"Happy the man whose wish and care
A few paternal acres bound,
Content to breathe his native air
In his own ground.
Whose herds with milk, whose fields with bread,
Whose flocks supply him with attire;
Whose trees in summer yield him shade,
In winter fire."

During these days of pure food investigations and the attendant revelations, the farmer has good cause to rejoice that his fields and flocks supply him with a large part of the necessities of life. From some of the recent horrible disclosures made by the government experts in investigating the beef trust, it would seem that we must nearly, if not entirely, deny ourselves the use of meats, fresh, or "embalmed," unless we have absolute knowledge of its source and this must not be far removed from the farm.

A recent government bulletin says:

> "The demand for information on this subject (food adulteration) is now very general and, as is often the case when public interest in deeply aroused, there is an unfortunate tendency toward exaggeration which frequently amounts to sensationalism. Such an attitude is to be deplored, and unless it is checked must sooner or later react unfavorably. It is not unusual to speak of some of our typical foods as poisoned, and of food manufacturers as poisoners. Such characterizations are unfortunate and untrue."

Such a mild statement from such a source, in view of the testimony now being given by government experts on the witness stand looks as though the writers had been derelict in their duty of through lack of energy (or something else) had failed to probe to the bottom of the matter. The wildest claims of the "yellow" journals have been more than substantiated, during the past week by the government's investigations at Chicago. Nothing yet published by private investigators can add color to the sworn statements of these experts or the shame-faced admissions of the men now under investigation.

It appears that copper is used to color green pickles, peas, beans and other vegetables; butter preserved with boric acid; milk with formaldehyde; jams and jellies with salicylic or benzoic acid; meats, oysters, etc., by borax, boric acid, sulphites or formal dehyde; and so we might continue to list them until columns are filled, but wherein the profit. The farmer may have pure water, if he stays at home; in the cities it must of necessity be less pure. If one turns to light drinks he is again confronted with what our best chemists have characterized as "deadly poisons." Should we wish something 'with a stick in it" a government bulletin says:

> "Beer is frequently preserved chemically. In the case of whisky and brandy artificial products are often sold under labels which represent them to be natural products. So-called essences are made on the manufacturing scale and sold commercially for the preparation of beverages intended to represent the various classes of distilled liquors. To these products a small amount of soap is sometimes added to produce a 'bead.' "

'Whither shall we turn," but to the farm, if we would preserve life and health. Rural life may have its drawbacks, the few may be consigned to unremitting toil, but to the intelligent farmer who studies his own and city conditions, the contrast in favor of of country life must be so strong that it will seem "one glorious morning with the sun ever climbing higher and higher; one blessed spring time, and yet richer summer—every plant in full flower, but every flower the bud of a lovlier."

* * *

A Valuable Gift.—California has, by the terms of the will of the late M. Theo. Kearney, received a gift of rare value and usefulness in the shape of 5000 acres of fertile and highly improved lands a few miles from Fresno, valued at three-quarters of a million. Though slightly encumbered it is stated by those best posted that after paying off the indebtedness the property would represent a clear gift to the State University of about half a million dollars.

In his will Mr. Kearney expressed the wish that the lands and property might be used as a viticultural experiment station for the use of the College of Agriculture and no doubt his wishes in the matter will be fully respected. Within the property is a beautiful park of 24 acres, splendidly designed and planted, together with many buildings suitable for the uses to which the land and appurtenances will be put. The vineyard is the largest in the state and has been a most profitable one, and altogether the property might well be termed a "princely domain."

While we fully appreciate the gift and its value to the viticultural interests of our state, we cannot but feel that a portion of it in the interests of justice and a "square deal" might have been so disposed that it could have reverted to those who had a moral, if not a legal right to claim it as their own. Many years ago more than a thousand acres of this vast estate were sold to settlers, under contracts to plant vineyards and make other improvements. Hundreds of acres were planted, homes were built, grounds laid out and embellished, and a prosperous community established, for the vineyards had begun to fruit, the colony was happy and newcomers were being attracted by the beautiful, well-ordered appearance of the settlement.

Then came the dark days of '93, finding the lands not entirely paid for. Mr. Kearney had in the contracts a 12 per cent compound interest penalty for all settlers who defaulted. He enforced the forfeiture claims, took back the entire lands, with all the improvements and thrust the holders, with their families, out into the world to shift as best they might. Many of these, supposedly prosperous in the morning, found themselves at night but paupers. The cries of anguish that went up from these homeless people would have haunted any man not entirely devoid of humanity until the day of his death and have moved him, in his will, to make some attempt at restitution.

Theo. Kearney was known as "the man of mystery," one "who was a friend to no man and to whom no man was a friend." So far as we know, no one ever sat at table with him, he never entertained anyone, either at home or abroad; he had no close acquaintance or confidant and his austerity of manner and bluntness of speech kept all persons at a distance. He labored hard in the interests of the vineyardists of Fresno and vicinity, but was, of all, most heavily interested financially. He died, as he had lived, alone and friendless, and except for his request that the gift to the state be known as the Kearney Experiment Station, would doubtless be soon forgotten.

* * *

The Farmers' Institutes.—The year which closed June first was one of unusual interest and value to all interested in Institute work in California. Each succeeding year notes a fuller appreciation on the part of the farmers of what is being done to uplift and dignify agricultural pursuits. So much of scientific application has been brought to bear on farm life in this State, that it requires no stretch of the imagination to realize that of all sciences agriculture is the deepest, most interesting, fraught with greater possibilities, more certain in reasonable compensation for time and labor employed.

In the central portion of California the reports of Institute work are most gratifying. More applications for Institutes, more attendance, discussion and interest evoked than in any former year of the work. By far the greater number of these meetings were in charge of Prof. W. T. Clark, who has also found time to make several lecture trips to the southern part of the State. It seems to be generally conceded on the Los Angeles Circuit, that next to Prof. Wickson, Prof. Clark is the ablest "all round" lecturer the University has.

In the southern end of the State we have more definite data. Mr. Neff, the conductor of these Institutes, gives us the following interesting note: "From December 10th, 1905 to May 17th, 1906, there have been held 101 sessions of Farmers' Institutes on 38 days and in 24 towns. The total attendance has been 5961." These figures show a most satisfactory attendance and we trust that notes will be made, during the coming year for comparison a year hence, that we may know for a certainty that interest in the work is growing. The above note is a true index to the business habits of the gentleman who has had charge of the Institutes in the south during the past year. Everything was carried out promptly and precisely, along the best lines, in a way that has appealed to all our farmers with large interests, for several of these have told us of letters written to the University authorities in commendation of the business-like methods pursued by Mr. Neff. He has succeeded in getting our "biggest" men spurred up to greater interest and activity than they have evinced in this work for some years past.

More speakers have been carried during the past year than before and the subjects were more diversified and practical, all political and other questions pertaining to extraneous matters have fortunately been avoided. Care must be taken to choose only those subjects nearest and dearest to the average rural community or we shall speedily have dissolution. The meetings of the past year have been unanimously voted as unusually valuable. What we want now is a united effort to impress upon the next Legislature the importance and value of this great educational campaign, so that the appropriation for Institute work for the next two years will be adequate for our needs.

NEWS OF COUNTRY LIFE IN THE GOLDEN WEST

HORTICULTURE.

Sultana shipped first cots May 25.

Gilroy's cherries go to Los Angeles.

Fresnoites are sulphuring Muscats.

Livermore has a new vine disease.

Redlands shipped first Valencias this week.

Marysville canneries are very short of help.

Canning cherries were not hurt by the rains.

Corona shipped 28 cars of citrus last week.

Colton is making a specialty of orange cider.

Escondido has shipped 50 cars of lemons to date.

The State will put up a $7000 laboratory at Whittier.

Petaluma reports cherries very slightly damaged.

Newcastle shipped Alexander peaches east last week.

Fresno growers are offered 8 cents for dried peaches.

Santa Cruz reports heavy loss in cherries and berries.

Cloverland, Washington, reports a splendid apple crop.

Blenheim cots are going from Dinuba to Los Angeles.

Redlands has heavy calls for St. Michaels and Sweets.

Corona has sent out 750 cars of citrus fruits to date.

Sebastopol Royal Anne cherries will bring 6 cents this year.

Only one-tenth of the hay about Marysville has been cut.

Three thousand cars of citrus went from Redlands this season.

The new Riverside experimental station will occupy 23 acres.

Laytonville reports damage to gardens by last week's frost.

Alta prune growers have received offers on a 2 1-2 cent basis.

The pear growers of the Sacramento river region have organized.

Mildew last year reduced the Fresno raisin crop 15 to 20 per cent.

The destruction of canneries in 'Frisco will overtax those outside.

A 35-acre plot is being planted at Hanford to Eucalyptus tereticornis.

Redlands has shipped 600 cars less of citrus than last year at same date.

A Hanford vineyardist says his raisins were damaged 20 per cent by the rains.

A big harvest of wild blackberries is being harvested along the Kings river.

It is estimated that the late rain caused a loss to the cherry crop of $250,000.

Monrovia ranchers were saved thousands of dollars in irrigation by the late rains.

Around Oroville the rains pounded immense quantities of cherries from the trees.

J. H. Reed, tree warden of Riverside, is rapidly covering all streets with trees.

A 4-acre strawberry patch at Hanford will this season yield a gross income of $1,000.

A Boise gardener expects to harvest 350 boxes of strawberries off a patch 30 feet square.

Sacramento county has appointed a special pear blight inspector to continue the work.

A Los Angeles man paid $10,000 cash for the cot crop on the Wilson ranch at Toluca.

Railroad traffic is so impaired that fruit shipments in some sections are in serious danger.

Hugo De Vries, the noted Dutch botanist is here to make a study of California native plants.

All the moveable plants at the Santa Ana U. S. plant station will be sent to the Chico Station.

The Royal Anne cherries in all parts of the State were not ripe enough to be rain damaged.

The Southern California shipments have amounted to 19,000 cars of oranges and 25,00 cars of lemons.

Santa Ana Valley Walnut Growers' Association has purchased a new model machine for drying walnuts.

Reports from Northern California indicate that there will be about seven thousand cars of deciduous fruit sent forward.

Navels are practically cleaned out in Riverside, and seedlings have the call now, going out with St. Michaels and a few Bloods.

AGRICULTURE.

Las Posas has had 21.42 of rain.

Eastern grain sacks are arriving.

Escondido expects a fine raisin crop.

Oxnard beets promise tremendously.

Beans have suffered from too much rain.

Fresno vineyardists say "too much rain."

Hops at Santa Rosa are bringing 12 cents.

Chino beets were helped by late rains.

Fredalba has had 57.76 inches of rain to date.

Hollister reports light rain and no damage.

Kern county reports "fine alfalfa this year."

Farmers in all parts are crying for grain sacks.

Santa Cruz has had enough rain—31.16 inches.

Coachella valley will ship 360 cars of cantaloupes.

The beet campaign at Chino opens about July 15.

Dinuba has had 5 inches more rain than last season.

The rainfall around Magalia totals 93.33 up to date.

The new "beet town" of Hamilton is having a boom.

The asparagus crop about Coachella will be a "buster."

600,000 acres of grain are growing around Escondido.

All San Quentin grain sacks are contracted to Sept. 1.

Vineyardists and orchardists rejoice when late rains fall.

Imperial farmers cannot procure enough harvest help.

Corn growers all over the State report a splendid outlook.

Several cars of beans were shipped from Saticoy last week.

High winds have slightly damaged melons around Thermal.

Highland reports 24 inches of rain as against 22 last season.

Exeter cantaloupes were greatly benefitted by heavy rains.

Too much rain is causing mildew in some vineyard sections.

In Fresno county hundreds of tons of hay were "on the float."

Many Visalia farms have been under water three times sin Jan. 1.

Desert grown asparagus sells at 75 cents per pound in New York.

Woodland reports very little damage to grain from the last storm.

Napa has had 55 inches of rain, two inches above last year's supply.

Late sown beets are being replanted at Salinas. Too much rain.

Farmers all over Oregon were damaged by heavy rains last week.

Hay and grain was somewhat damaged by rain in all parts of the coast.

Ventura reports that much bean acreage will have to be replanted.

The State Grange will meet in Santa Rosa the first week in October.

The Hanford farmers want a canal from Tulare lake to the San Joaquin river.

All hop sections were greatly benefitted by the copious rains of last week.

At Visalia thousands of acres of hay and grain were practically destroyed by flood.

The farmers of Stanislaus county pay $13 an acre water tax a year upon their alfalfa fields.

Folsom farmers were badly scared by the heavy rains, but now say little damage was done.

Fresno reports incalculable damage to fruit and grain in that section by the recent heavy rains.

The unusually heavy rains were fortunately followed by good haymaking weather in all parts of the State.

A dispatch from Salinas says that 15,000 acres of sugar beets will have to be replanted because of heavy rains.

The Pomona Farmers' Club with members from many others will hold their annual meeting at the Curtis ranch, near San Dimas Canyon, June 11.

Nearly 1000 acres about Northam, Orange county, have been purchased by a club of 130 families and have been subdivided into small acreage tracts.

LIVE STOCK.

Chino has a new creamery.

Santa Rosa is building a new creamery.

Redding wool is selling from 19 to 23 cents.

Cloverdale reports a light spring wool clip.

Healdsburg is to have a poultry association.

Salinas bee keepers need all the rain they will get.

Rains have been bad for bee keepers in all sections.

Bee keepers will get a good late crop of honey.

Stockmen in all parts are jubilant over the rains.

Escondido is getting to be an important poultry center.

Mendocino stockmen are smiling over promise of late grazing.

Folsom dairymen are preparing for the annual drive to the mountain ranges.

Farmers around Sheridan say the recent rains killed lots of young turkeys.

The elk which were taken to Giant Forest park last fall are doing exceedingly well.

About 15,000 bags of wool, valued at a million dollars will be handled at Stockton this year.

The San Luis Rey Creamery reports a supply of 987,881 pounds of milk for the year from 260 cows, from which $14,976.66 was received. This produces a gross income of $57.50 per cow.

FLOWER SHOWS.

The northern flower show usually held at this season was unfortunately "blocked out," or blotted out, by the appalling disaster which overtook our metropolis, but in the south the Los Angeles exhibition was extremely fine; perhaps no better display of cut flowers was ever seen in our State.

We sincerely hope that the coming autumn will see the San Francisco gardens luxuriating in bloom so that each end of the State will be able to hold their usual annual chrysanthemum show, which in the past have proved so alluring to many thousand of our flower fanciers. This semi-annual attendance on these exhibitions is in itself a liberal education in the wonderful floral productions of our glorious clime and all to whom it is possible should place themselves in the ranks of the recognized flower lovers.

LINER ADVERTISING

Advertisements in Liner Column will be charged 1¼ cents per word. No advertisement taken for less than 25 cents. Eight words to a line.

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FOR SALE—FINE LAND WITH WATER. close in to Turlock. Address Owner, Box 32, Turlock, Cal.

FOR SALE—A FEW THOUSAND BLUE Gums, cheap to close out, Address L. Z. Huntington, Anaheim, Cal.

BLUE ANDALUSIAN EGGS FOR HATCHING, from three noted strains, $2.50 and $3. Incubator lots $7.50 to $15.00 per 100. Mrs. T. R. Griffith, 3111 Walton avenue, Los Angeles.

REPRESENTATIVES WANTED IN every county to sell Parafelt Rings for Mason jars. The only absolutely sure and sanitary sealing ring made. Big money for hustlers. Write to T. S. Wilson, 1357 9th Ave., E. Oakland, Cal.

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HEALTHFUL VEGETABLE COOKING oils, free from disease. Inexpensive. From corn, cotton and olives. Tiny samples 1c each. Also honey and olives. Address W. S. Ritchie Corona, Cal.

ARE YOU INTERESTED IN FRUIT CANNING? We have a book free describing six sizes of canners for the ranch or small factory, ranging from $10 to $125. Send postal with address for it. W. S. Ritchie, Corona, Cal.

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Live Stock and the Dairy

BY MRS. MINNA. E SHERMAN, FRESNO, CAL.

SEPARATORS.

The old question which is the best separator, like that other tormentor of the Farmer's Institute speaker, as to which is the best breed of dairy cows, eternally rises to be answered. To both questions the same answer truthfully applies. There is no best, as much depends on the individual machine and the intelligence of the operators. As to separators, all I have ever owned required a degree of mechanical skill to operate them successfully; they are far from being automatic. I have owned and operated nine separators of four different makes or patents. All of these when operated according to directions as to speed and oiling did close skimming. At times I have to give the separator personal attention, as the men get it out of adjustment, but if promptly put in order the expenses are light. When the separator is not running in balance it loses the "tune or song" just as the automobile does when out of sorts, and it should be stopped and made right before it wrecks itself. The causes are usually so simple that they can be removed at once if the machine is understood. The standard separators operate on the same general principle, that of the centrifuge—the milk being heavier is literally swung by the rapid motion out from the lighter cream. Without there is some new principle lately applied these are the commercial separators of today. There are some cheap separators offered that claim a different plan, so several correspondents inform me; to them I would say these must demonstrate their ability to compete with the present style of separators in clean quick skimming before they will be accepted as a substitute. I have not seen these new machines, but one correspondent asks if the one advertised at $3.25 can be recommended, another writes they are offered at $15.00, and still another one at $50.00. The last one is simply a very small machine and for ten cows would take too much time, the other two are too cheap I fear, to be recommended. The matter of time reminds me of one of the stories told at the Berkeley Farmers' Institute last Christmas. One speaker at an Iowa meeting had recommended that the food for pigs should be cooked. Speaking of the increased ease of digestion, he said that cooked food was taken up in two hours, while the uncooked corn required at least four for assimilation. One old farmer got up and asked: "What does that matter, what is a hog's time worth anyway?" Now on many small farms the men feel that the wife and children can turn the separator, and what is their time worth anyway? The boys, however, as soon as they are old enough, step out for themselves to escape the belittlement of having their labor put upon the basis of pigs digestion.

The agents of a separator, for the sake of making a sale, will allow a week's trial of a separator; always accept this and be sure you have a good one before paying for it.

The present separator, the true separator, is the application of centrifugal force, in a machine driven at high speed to develop the force. One form of so-called separators are the dilution machines; these have served their time before the application of the centrifuge. They were an improvement on the open shallow pans as the milk was protected from exposure to contamination of dust and odors. They, like the pans, under favorable conditions of milk from fresh cows and right temperatures, would do close skimming. while under less favorable conditions the skim milk would show as high as 2.5 per cent of butter fat. The present form of separator can be run so as to leave only one-tenth of 1 per cent of butter fat in the milk without regard to temperature of the period of lactation of the cows.

While I do not recommend any make of separators as being better than another, it is only fair to say that I have used the following ones and they were all good: Danish-Weston, DeLaval, United States and Sharpless. These machines are correctly built, and if they fail to work well it is the fault of the individual machines and it should be exchanged for a perfect one. For this reason when you buy have an agreement in writing that if the machine does not skim clean that it will be replaced with a good one. I am like the little Irish Maggie that arrived in America and in five months lived in seven places. When her aunt taxed her with being changeable, saying, "Maggie, when you have been here longer and have more experience you will learn that you must be patient with people," Maggie replied with considerable dignity: "I have had my own experiences too since I came to America." Now I have had my experiences with separator men, and would caution you that anything the selling agent says the house behind him will not be bound for unless it is in writing. My experience cost me $200 and lots of vexation. I personally went to San Francisco and purchased a separator at a house where I had bought many hundred dollars worth of farming tools. The agent had not the size I wanted in stock, but had a larger one. I said I was afraid that the small four horsepower engine would not run it, but he assured me that it required only two horse-power, so I paid him the $200 down to secure all the discounts for cash. The engine could not run it, nothing short of the twelve horsepower engine used for pumping would run it. I never obtained either my money or a smaller separator and finally sold it cheap. All because I accepted an agent's word that the house refused to make good. Well, that house went down in the San Francisco fire, so peace be to its ashes, and may its business methods never again be resurrected.

* * *

Editor Cultivator: As an interested reader of your stock department I desire to ask you a question. Can you recommend a feed cutter that can be used for cutting alfalfa, oat hay, etc., for cow feed and that will also cut feed fine enough for chickens? Also the name of a dealer who handles a feed cutter of this nature.—J. J. C., San Diego.

Any of the small hand cutters should do this all right. If a power cutter is desired I can say that either the Ross or Belle City will cut from a quarter of an inch up to two inches. As to where you can buy them I can not at present give you addresses as living in the central part of the State, San Francisco has been our purchasing point. The dairy supply houses of Los Angeles surely carry full lines of these cutters, so ask your local hardware man for their catalogues.

Veterinary Instruments, Black Leg and Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

* * *

Taking a Test. (E. W., West Park.) The simplest way to test cows is to take a three days' test once a month, one day's' milk does not often give a good average. Take the sample three consecutive days, preserving the milk by adding a corrosive sublimate tablet. These can be purchased at any drug store. I personally prefer to use bichromate of potassium, as it shows in the milk and prevents danger of accidental poisoning. The three days' sample is fairer to the cow. The milk is measured by using a uniform amount each time a sample is added. For this purpose I have a small tumbler holding half an ounce. When the composite sample is complete it then is three ounces, or half an ounce from each milking. The practice of daily weighing the milk is fine; it acts as a check on feeding and on care of the cow, and it also, with the three days' samples, gives an absolutely correct test. In Canada the dairymen form societies for testing take the three days' sample once a month. The government tests the milk for them, and then with the milk weighed each day, each cow is given a government record by the year. In one of these testing societies, the first year the cows averaged 2,341 pounds of milk testing 3.8 by the year. At once weeding began of the poorer cows and the second year the cows averaged 3,000 pounds of milk of 4 per cent fat. The government of Canada is paternal and our own is rapidly becoming so, recognizing that the country's prosperity depends on the way the people are fed.

Success is the desired object of all dairymen, but it seems to be the hardest to obtain. Cleanliness is the first secret of success. Create better conditions in the stable. Give the cow better air to breathe, better food to eat, good water to drink and cleaner conditions to live in.

The dairy cow and the hog make an excellent combination. Not only do they pay well, but they take little fertility from the farm.

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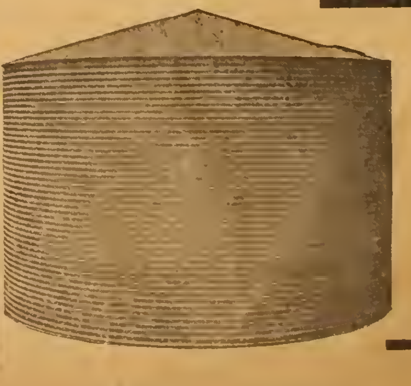

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Having sold my ranch I am forced to sell Golden of Biltmore 60082, a grandson of Golden Lad's. Golden of Biltmore is one of the best, ***if not the best*** sire on the coast, several of his daughters less than two years old selling for over $200 each. Highest bidder for next sixty days takes him. If everything is not just as represented, I will give anyone the ***bull free of charge. I sell on merit.***

C. S. Burgess, Riverside, Cal.

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—ST. LAMBERT OF RAMONA, No. 62633,—
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For Sale--Registered Jersey Bull Calves

About 6 months old, solid color animals and first-class in every particular. Out of as fine stock as can be found in this State. Tested dams. Detailed information on application. Address or call any afternoon.

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The Whiting Jersey Stock Farm Co.

Have moved their herd of Jerseys from San Bernardino, Cal., to the famous Imperial Valley, and hereafter their post office address will be Heber, San Diego Co., Cal., from which they will conduct all their business. Abundant green feed every day in the year will be of great advantage in the best development of our young stock.

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Service bull "SARGENT FOX," 64833. Bred on the Island of Jersey. Sire, the great Flying Fox, that sold at auction for $7,500. Dam, Miss Sargent, reserve winner over Jersey; winner of seven first prizes and five championship cups. "One of the grandest cows the island has ever produced."

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For Sale, yearling bull Ruth's Gordon King, No. 72360 A. J. C. C. He is of richest breeding on both sire and dam's sides. Also three richly bred heifer calves by Marigold's Exile King, from cows that are good yearly producers. For particulars write

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L. Bradbury Duarte, Cal.

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At head of herd. Young stock for sale.

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FEEDING THE BROOD SOW.

The feed of the pregnant sows should be rich in protein, which is a bone, muscle and lean meat former. Oats, peas, mdidlings and barley should constitute most of the ration, leguminous pasture and dairy by-products are also very good. During the first two months no change need be made in her usual food and she can be left with the rest of the drove, but as her time for farrowing approaches she should have different treatment as stated above. As farrowing time approaches the feed should be more sloppy and limited in quantity. Any tendency to costiveness should be overcome by feeding bran, oil meal, roots or pasture. A constant supply of wood ashes and salt is especially needed at this time to satisfy the craving of such food which often makes sows eat their pigs.

The manner of preparing the food should depend upon circumstances, as if the grain is hard, small or expensive, it should be either ground or soaked, the latter being preferred for wheat: Shorts and meal will bring best returns when made into a thick slop and fed sweet. Grain should always be fed on a clean floor and not thrown into muddy lots as many of the farmers are in the habit of doing. A good ration for the sow is two parts corn, two parts barley, two parts shorts and one part oil meal. It is not necessary ordinarily grind until shortly before farrowing.

She should be fed at regular intervals twice a day, and I have found that if a little stock food is fed at this time, as directed she will keep healthy and in fine condition.

When comfortable shelter is provided and good winter pasture can be secured, fall pigs are usually as profitable as those farrowed in the spring and I would expect my sows to farrow two litters a year and raise an average of nine pigs to the litter. This would make 180 pigs per year for the ten sows. The sows should be bred the last of November and the first day of May, so that the pigs will come in March and August.—Exchange.

THE BALKY HORSE.

Nine times out of ten a balky horse is the result of a balky driver. Many high strung and nervous horses are completely ruined by bad management on the part of the one working them. If the attention of a balking horse can be diverted, half of the trouble is over, yet how few men will refrain from beating him at such times.

When a horse is inclined to be balky he should be put in charge of the best horseman about the place, and not driven by everyone on the farm.

If he is inclnied to stop say "whoa" sharply. Then he will not think he is stopping of his' own free will. Get down and walk about him lifting up one foot and then another, tapping them with a stone may answer in diverting his attention; pretend to fix his collar, perhaps his mane is under it and needs attention. There are many ways of diverting a horse's' attention to make him forget his bad habits, like pouring a little water in his ears or rubbing sand in his mouth. Then if you speak to the quiet horse along side of him they may start off together or they may not. In any event keep cool. One scheme may work this time and may never work on the same horse again. The only alternative is to be ingenious, patient, long-suffering and kind until you find some other fellow who wants to take a hand at driving a balky horse.—The Farmer.

See Us for Sanitary Milk Bottles. O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

TO BREAK A STABLE KICKER.

The best means is to give him a sand bag to exercise on. Fill a grain sack half full of sand so the sack will hang just where the heels of the horse will have good play upon it. Tie the horse in the stall with a good strong rope and let him kick. At the first kick the bag will swing away and return giving the horse as good as he sent. For the next few minutes there will be a lively mix-up between the horse and the sack, but the sack will hold its own, returning all it receives with interest. The horse in bucking against the real thing, will soon come to a realization of the fact, and will be thoroughly cowed. Leave the sack behind him for a week or so and then remove it. If he ever shows a tendency to get into his old habit of kicking, give him another punch bag to exercise with.—Epitomist.

FEED FOR MARE AND FOAL.

A correspondent residing in Ohio desires to know how he shall feed a racing bred mare that is suckling a foal. He states that he has corn bran, middlings and oil meal on hand and the best timothy hay, but will have clover pasture in one season. He also wants to know what will be the best ration for the mare when the colt is weaned and for the youngster after separation from its mammy. Dismissing the hay first, we should advise giving the mare about 12 lbs. of hay each day if she weighs 1000 lbs. and in that proportion if she weighs more. Of the grain she should have about all she will clean up, and seem a bit hungry still after getting through. A small part of the hay should be run through a cutting box into half or three-quarter-inch lengths and mixed with the grain ration. Preferably, we would have the oats ground and the corn also, though only a little of the latter should be used. Ground oats and bran, three-fifths and two-fifths bran by weight, mixed with cut hay, enough when dampened with water to fill a common stable bucket, we should consider the ideal ration for this mare. A handful of the oil meal may be added with advantage. Middlings we do not like as horse feed. It is apt to form a pasty mass in the small stomach of the horse. One part of the three parts of oats (by weight) may be replaced by ground corn occasionally by way of variety, and the food may be given dry once a day, if the mare likes it that way, for the same reason. We can give no absolute rule of thumb to follow as to quantity of grain to use, but a good rule is to allow one pound of grain per day for every hundred weight the mare shows on the scales. Watch her carefully and give her more or less according to her needs. The foal also should have all the grain she will clean up. Sieve the husks out of some ground oats add a trifle of bran at first and let him nibble at it at will. He will soon learn to like it. Fix a creep for him through which he may enter, but which will turn back his mother. Feed her three times a day, or only twice a day if more convenient, but let him have the chance to eat whenever he wants to. As he grows older increase the bran somewhat, and add a little oil meal (pea size) and let him have always all he will eat. Clover pasture we do not like for mares and foals. We prefer sound, old blue grass or mixed grazing and a shed should always be provided for shelter from the heat and flies in the dog days.

Cream Separators, all sizes, all prices. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

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Put up in 25c, 50c and $1.00 Cans
MONEY BACK IF IT FAILS
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MINNEAPOLIS, MINN.

RAISE A GOOD ANIMAL.

It doesn't cost much, if any more, to raise a good animal, than it does to raise a poor one; all will admit that. Now at any time the good animal will bring more money than the poor one and at a time like this, when stock cattle are a drug in the market, the difference is great. We had an object lesson in this, last week, at a stock sale that we attended. Readers will remember our speaking of a sale two weeks ago where cows sold for around $17. At the sale we were at the other day the stock had been bred up by using a pure-bred bull for the last seven years. This was all the extra expense that this man had been to, over the other, yet these cattle sold, at public sale, for an average of $6 per head more than the others. One used an animal to head his herd that cost $100 while the other had never paid over $25. The first man didn't have to sell many head to pay the extra cost, did he? And he has the satisfaction of seeing nice looking cattle around him, which is worth something to any man. Now don't think that we are harping too long on this subject, when it is one we have all got to face, sooner or later. Less cattle and better ones, is what we have got to come to, and the sooner the better for us.—Farmer.

No More Blind Horses for Specific Ophthalmia, Moon Blindness & other Sore Eyes, Barry Co, Iowa City, Ia, have a sure cure

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High grade stock of best strains Young stock for sale. M. BASSETT, HANFORD, CAL.

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ANSWERS TO CORRESPONDENTS

(All questions on live stock and dairy matters are referred to Mrs. Sherman for answer. It often occurs that "Anxious Enquirer" needs an immediate answer. To pass this correspondence through the Cultivator and wait until the next issue is printed will often entail a monetary loss upon our subscribers. Desiring to be of as much service to our patrons as possible Mrs. Sherman has kindly consented to answer all enquiries direct, if a stamped and self addressed envelope is enclosed with the letter of enquiry. We trust, and believe, that such an arrangement will be of great benefit to our readers. Address Mrs. Minna E. Sherman, Minnewawa Ranch, Fresno, Cal.)

TO KEEP OFF FLIES.

Editor Culitvator:—Can you give me a remedy for keeping flies off of cattle?—D. F. C., Los Angeles.

Lysol two ounces, oil of tar four ounces, creolin two ounces, cotton seed oil one gallon, make an emulsion by pumping in back a couple of times. Use a spray gun to apply. Use full strength on calves except around the eyes. Creolin two ounces, oil of tar four ounces, warm water one gallon, is also effective for cows and will not make them sticky like the oil. The first remedy is good for ticks and lice on cattle and should be applied to the under parts where these congregate.

MILK AND LUMPY JAW.

Editor Cultivator:—Will you kindly tell me if the milk from a cow that has recently had the lumpy jaw is all right for family use. Is there any danger of tuberculosis? She is a Jersey, two years old and has good appetite and in fair flesh.—S. R., Anaheim.

If the cow is cured of lumpy jaw, and has no other disease ceratinly her milk is wholesome as far as the disease is concerned. Tuberculosis is a different disease and your cow can be tested by a veterinary with tuberculine. This is never amiss, we began to test our cows some years ago and think it pays well as a financial proposition and then we are sure no one drinking milk at our table can be infected.

GUERNSEYS WANTED.

Editor Cultivator:—Can you give me the address of any breeder of Guernsey cattle on this coast?—D. S. J., Redlands.

I am sorry I cannot give you any addresses of coast breeders of Guernseys. The Guernsey Breeders Sale List Bulletin I have before me but I find none for this coast listed. I should like to see some of this breed here for it is a noble race of dairy animals. I have sent your name and also that of another correspondent to Wm. H. Caldwell, Secretary of the American Guernsey Cattle Club, asking him to take the matter up with you. The official postoffice address is Peterboro, N. H., where you can also write for further information.

ANGORA GOATS.

Editor Cultivator:—I have some wild land covered with sage and bunch grass, etc., quite broken, not worth anything for general farming but lots of good feed. Riverside County near Redlands. Am thinking of stocking it with goats. Elevation 2500 feet, plenty of water, no trees. What kind of goats would you advise buying, and where and of whom can I get them at the best advantage.—O. S. D., San Bernardino.

An advertisement in a paper would probably bring an answer. It is generally conceded that Angora goats are profitable, they certainly clean up brush land in short time. As they roam and destroy more feed than they consume, it is usually considered wise either to herd or to fence the land into different enclosures. The hair sells for more per pound than wool though there is much less of it. The hides make mats, while the meat from the kids is delicious. You remember it was a kid-dressed savory that cost Esau his father's blessing. I have seen Angoras feeding in the foothills and have tried to buy a few, but have never been able to do so, as the Basque herders had no authority to sell and the owners were far away.

For Wooden Sole Boots and Shoes see O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

FEEDING GREEN CANE.

Editor Cultivator:—What would be the result of feeding green sugar cane and barley hay chopped together?—S., Compton.

Try it and let us hear results. It will not be a balanced ration as it will lack protein. If for milk cows a little alfalfa hay or pea-vines or oat hay would improve it, or if too bulky a little bran should be added, if the cows will pay for it.

CORN CULTURE.

Editor Cultivator:—I notice that your stock and dairy writer has used Egyptian corn as a dairy ration. I should like to inquire how to handle it. We have raised a great deal and have never found an economical way to get it in right shape into the feed trough. We have used the corn harvester, then it is hard to thresh and expensive. We have headed, then we have expense of threshing and grinding. I have searched everywhere for a machine to take the place of the corn and cob mill back east so that the Egyptian corn heads and possibiy the barley heads could be run through the grinder. Have just ordered samples to be sent east to test the cob mill. You will readily see what a saving this would be. I shall be thankful for any consideration you may give this inquiry.—J. M. H., Los Angeles.

We chop the head into inch pieces with an ordinary hay cutter, five or more tons at a time, storing it in a bin near the cow barn. At feeding time ten pounds to the cow is spread on the floor of the large mixing box, (12 by 12 feet and 2 feet deep), about two inches deep usually, the chopped corn heads are then sprinkled with water, on top the rest of the grain is spread and this is also wetted down. The morning feed is prepared the evening before and the evening feed at morning feed time. Just before feeding the mass is mixed thoroughly with a hoe and then divided according to amounts fed to each cow. I believe the machinery to grind it will be an improvement. Lately we have bought the thrashed corn, the reason being that having abundant water Indian corn pays better to grow and then silo, while as a catch crop sorghum is preferred. The Egyptian corn roots are expensive to clear off the land, they will not burn for a year or more. We do not like to have a mass of vegetable matter stacked up for fear of starting a bed of mildew or fungi to infect the grape vines.

Many a so called dairy cow is eating a dollar's worth of feed for every fifty cents worth of milk and cream she is producing. The cow that will not give 3000 pounds of milk yearly testing at least three per cent butter-fat, is eating the farmer into debt.

Profit in the Poultry Yard

BY MRS. A. BASLEY, HOLLYWOOD, CAL.

THE EFFECTS OF WEATHER ON POULTRY.

Easterners complain that we in California sell climate when we sell them land. I will not dispute the matter for we usually have such a lovely climate that it would tempt any one to buy a bit of land to live on and enjoy the delightful balmy air.

When I was in Oklahoma I made some remarks about the climate, "we don't have climate here!" was the rather startling reply, "we have weather!"

I think that we may decide that this spring we are having or have had "weather" instead of "climate," and that we might be willing to sell some of it if we could have our usual pleasant climate.

"My hatches have been very poor this spring," writes one. "I have only had eight or ten hatch out of a hundred, and I am dreadfully disappointed," is the sad cry from another. "The poorest hatches I have ever had!" reports another.

It has been the big conundrum propounded to me this spring, and I think a good deal of the blame has been laid on the weather, which has been unusually damp and chilly and perhaps the weather has had something to do with it, but we should adapt ourselves to the weather if possible. We should be so thoroughly acquainted with the appearance of the eggs during incubation that if they are not drying out sufficiently (we can tell that by the air cell in the eggs not being large enough) we may remedy it by airing the eggs more, or ventilating the incubator or the incubator room more.

When I visited Mr. Culver's broiler plant and saw his big eight-thousand-incubator he told me that he was having excellent hatches, but that many of his neighbors were having the poorest hatches they had ever had. I immediately asked him about his hydrometer and the moisture problem, and I learned that he had to keep the atmosphere more dry this year inside his incubator than last.

He thought it was on account of the greater humidity in the air, and it may be partly this; at any rate there have been poorer hatches than usual this spring and therefore quite a number of us will want to hatch later than usual to recoup ourselves if possible.

I have hatched every month in the year in California, so I know it can be done, but summer chickens need summer care, and here again let us consult nature.

Nature only hatches her wild birds in the spring or early summer, and if we want to succeed with our late hatches we must as far as possible give the hens and the chicks the same conditions as nature gives in the spring time.

I have already talked about the

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK

BUYS THE WORLD'S FAMOUS EGG FOOD NO. 4

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IF YOU WANT EGGS YOU WILL FEED NO OTHER

Used by all the largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the **GOLD MEDAL** at the St. Louis World's Fair for greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1604.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A Filcher, Commissioner.

And Now Comes New Reward for Merit:

Read the following telegram received from the Lewis & Clark Exposition at Portland:
"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

PETALUMA INCUBATOR CO.

Main Office and Factory, Petaluma, Cal., Box F. Los Angeles, 505 South Main Street
San Francisco Office and Salesroom, 33 Market St.

green feed and animal food which should be abundant, not only to make the eggs strongly fertile, but to make the chicks grow properly and to give them the large, sturdy frame which we all want in our fowls.

We must remember that in using the eggs for hatching so late as June, July or August, the hens have been laying for a long time; it is nearing resting time, the moult, and their vitality is lower than usual in spring, therefore give extra care to the hens whose eggs you need for hatching. Feed them liberally, especially with green food, have the nests in cool, shady places, and gather the eggs frequently during the day, keeping them in a cool cellar, until you set them.

It you set them under a hen be sure that the nest is in a cool place, either in a house which is shaded by a tree, or in a nest or barrel well shaded, on which the sun never shines. I found, some years ago, that one of my houses was quite warm. I took out a thermometer, put it in the hennery, and was horrified to find the temperature 112°. The hens were standing up over the eggs, and I had a fair hatch, but some cripples, especially among the ducks.

If you try an incubator keep constant daily watch over the air cell in the eggs, and guide the ventilator accordingly.

And when the chicks hatch give them shade even more than sunshine, plenty of cool, fresh water, and crisp green food.

Few realize how necessary shade is to fowls in this climate. The best of shade is under a green bush or tree, or plant of some kind. I have some French artichokes and the chicks delight to bathe or dust themselves or take a siesta under those luxuriant leaves. The underside of a leaf is always cool even on a hot day, and the shade under an umbrageous tree is several degrees cooler than that under a dry board. Fig trees give a grateful shade, and there is nothing easier to grow from a cutting of a neighbor's fig tree. Get a bit of the branch 12 inches long from a bearing tree, bury it, leaving only one inch, not more, above ground, water it, and in two years you will have figs to eat and shade for your chicks. I stuck in slips of figs everywhere I could and I found that those taken from a bearing tree bore fruit sooner than suckers which spring from the roots.

The chicken yards should have plenty of fruit trees to shade the chicks. I had peaches, plums of many varieties, pears, figs, walnuts, all were loaded with fruit. The chickens eat the fruit that falls and the hens sometimes fly up and eat from the trees and I never found it to injure them in the least. Perhaps if they had not been accustomed to green feed always, the first fruit might be a little trying, as green apples are to our boys, but usually there is not enough to hurt them, and they soon adapt themselves to the conditions.

Shade is a necessity and if you have no trees you can drive a few stakes or small posts into the ground and make a rough little frame on which to lay branches, rushes or even weeds. Or if you are using cat proof pens and have not even weeds lay a few gunny sacks on the top and on the western side. I made a handy little shade by opening a gunny sack and tacking four laths on the edges; this I would hang on the fence or lay over a coop and so give shade out on the alfalfa patch. If you make up your mind that shade is necessary you can find a way of getting it.

Cool water, clean and pure, is one of the hardest things to provide in summer. There are nice little drinking fountains to be had at all the poultry supply houses. These can be placed either under a tree or be sheltered from the sun in a box set on end. Or if you are far from town you can make a good little fountain out of a tomato can by either cutitng a V shaped nick in the edge, or by making a nail hole in it half an inch from the edge, then fill the can up to the hole with water, put a saucer over it and quickly invert it; the water will leak through the nail hole as fast as the chicks drink it.

Another way of making a drinking fountain is with a bottle. Take a bit of stiff wire, a hair pin will answer fairly well, put it into the mouth of the bottle bent in such a way as to keep the mouth of the bottle half an inch from the bottom of the saucer, when it is inverted. You can lean the bottle against the wall, fastening a wire to the wall the size of the bottle so you can easily slip the bottle out to clean and fill it. Or you can fix the wire in a box, arranging it so the bottle will stand on end in the saucer and be in the shade, or you can make a small square frame to hold the bottle in place. The most important part is the bent hair pin which keeps the mouth of the bottle from touching the saucer. The top of a Mason fruit jar makes a good sauce for very little chicks.

Shade, water and an abundance of green food are summer necessities.

* * *

VERTIGO.

Mrs. Benedickt, on my farm here, has several goslings, about two weeks old, which are dying from a peculiar trouble. They appear suddenly to become dizzy, stagger around like a drunken man, fall over, get up and fall over again. When they start to go to a dish or any object, they act for all the world like a drunken man. Their heads are not swollen nor are their crops hard. In about 24 hours they get past walking and die. I thought at first they had been overfed or fed on indigestible feed, but Mrs. B. tells me they have only crumbs and grass. The peculiar disease makes it of interest. We may not have it in California. I have thought you might be interested in the strange phenomenon.—J. J. S., Dunlap, Iowa.

Your friend's goslings are suffering from vertigo, very like "blind staggers" as you say.

Vertigo in both geese and ducks is usually caused by lack of shade. Shade is an absolute essential in the successful raising of these water fowl. Bathing the head in cold water and giving a small dose of hyposulphate of soda, or five grains of bromide of potassium, or a little Epsom salts (about twenty grains) in water, and keep them out of the sun for a few days then give them a shady place. Another cause for "staggers" is lack of grit; give coarse sand with each feed and leave a box of sand where they can always eat it. Little goslings should not be allowed to swim in water until they are four or five weeks old, eight weeks old was, I think my rule. You see I have tried my hand at goose raising in a limited way.

The American hen, pluming herself on the eulogy recently delivered upon her usefulness by a Congressman, has now entered the lists as a trust buster. Fourteen million two hundred thousand eggs were recently shipped into Chicago in one day, and the beef trust is said to be taking notice.

THE CHICKEN MITE.

The chicken mite (Dermanyssus gallinae) is generally distributed throughout the world wherever chickens are raised. The adult is of a light-gray color with dark spots showing through the integument and is about 1 millimeter (less than 0.04 inch long. When filled with blood the color of the mite is decidedy red.

The usual habit of the mite is to attack fowls at night and to hide in cracks and corners or under rubbish by day. In exceptionally bad cases of infestation mites remain on the fowls during the daytime. Often, however, an examination of fowls during the day will fail to reveal the presence of any mites, although the same fowls are badly infested at night. The presence of filth, such as droppings, rotten eggs, or other rubbish, is favorable to their multiplication, as is also a careless construction of buildings, which furnish hiding places for the mites. This mite attacks all kinds of farm poultry including pigeons, and also wild birds which nest about barns, especially swallows. Occasionally it infests man, horses, and other animals, producing symptoms of scabies by its bites. Young chickens and sitting hens are most seriously infested by this pest. At the Mississippi Experiment Station the mites were observed "so numerous that they actually hung in festoons to the sides of the nest-boxes." At this station and also in Iowa the chicken mite is considered one of the most formidable difficulties in chicken raising. At the Iowa Station sitting hens were occasionally killed outright by the mites.

Several remedies have been suggested for the control of the pest. The Division of Entomology of the Department recommends the destruction of the nests of swallows and pigeons about poultry houses, the removal of rubbish, provision of a dust bath for the fowls, and spraying the house and roosts with kerosene, kerosene emulsion, benzine, gasoline, or whitewash, or dusting with carbolated lime. Dr. D. E. Salmon recommends dipping infested fowls in a 1 per cent solution of carbolic acid for 1 minute, or in a solution of creolin, using this substance at the rate of 2½ ounces per gallon of water. The same author suggests the addition of pyrethrum or sulphur to the dust bath, application of carbolated lime as a wash, fumigation of the henhouses with sulphur, and the direct application of pyrethrum to infested fowls. The Virginia Station recommends spraying the infested houses with a 2 per cent solution of crude carbolic acid at intervals of two weeks.

Recent experiments at the Iowa and Mississippi stations in combating the chicken mite have shown that cleanliness is of prime importance, that all filth must be removed and all cracks exposed if any treatment is to be effective. Nests and roosts should be of simple construction and removable in order to facilitate thorough disinfection. Poultry houses should be constructed so as to furnish no hiding places for the mites. At the Mississippi Station henhouses were kept free from mites by thoroughly dusting with lime and sulphur at intervals of two weeks, treating the nests with crude petroleum, and placing moth balls in nests, but not in contact with the eggs. At the Iowa Station Dr. Repp had the best results from the use of kerosene emulsions made of ⅛ pound hard soap, 2 gallons kerosene, and 1 gallon water, the mixture being diluted with 10 volumes of soft water before using. All parts of poultry houses must be thoroughly moistened, particular attention being given to cracks, holes, joints and other hiding places. This application should be made three times in rapid succession on the same day. Some of the eggs of the mites escape this treatment and the application should therefore be repeated at intervals of about three days for a period of two weeks.

With this system of disinfection it is usually unnecessary to treat the hens directly, since the mites leave them during the day and are killed by the application of kerosene emulsion. The extermination of the mites may be hastened, however, by dusting the hens with pyrethrum powder after they have gone to roost on the evening before the insecticide treatment is applied. A good spray pump should be used in applying the kerosene emulsion, so that the material may be thrown into all cracks and corners. According to the experience of the Iowa Station the method is an inexpensive one. The material necessary for spraying ordinary farm henhouses costs about 45 cents.

THE AMERICAN HEN.

The American hen made a record in May. In one day last month there were received in New York over 40,000 cases containing 15,125,000 eggs. This was almost four eggs each day for every man, woman and child in Greater New York or more than three times the avreage daily consumption. The value of these eggs was $250,000.

The praise of the American hen and the recognition of her work have gone beyond the annual statistics of the secretary of agriculture. He reports that last year the eggs of the United States were worth more than the cotton or the wheat, more than all the potatoes, the barley, the tobacco, the sugar cane and the rice. They almost equal the dairy product and are surpassed only by the corn crop, a good part of which is fed to hens.

The Congressional Record also includes a proper tribute to the industry and value of the American hen. Every three months she produces more wealth than the capital stock of all the banks in the New York Clearing House. In two months she lays more value than the annual production of all the gold mines in the United States. Her eggs for six months are worth more than the year's production of pig iron. In less than two years the American hen could pay off the debt of the United States.

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IT FILLS THE BILL

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We do not give. We consider that every one using a sack of A. C. W. goods gets a prize, anyway. Full value and guaranteed; if not as represented MONEY BACK. We do not take value out of the goods to pay for premiums. We have been in business here 14 years and find good honest goods and fair treatment of customers wins out. The monthly increase in business shows it.

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Blue Andalusians

At Los Angeles, 1906, our strain in a class of 68 Andalusians with 16 birds won more firsts than all our competitors combined. Eggs, $1.50 and $2.00 per 14.
Blue Ridge Poultry Yards, 128 Avenue 32 Los Angeles

SHADE'S Rhode Island . . . Red Farm

Automatic Chicken Feeders.
Shade's Egg Food sold to cousumers only.
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Buff Orpington and Barred Rock Eggs

for hatching from pure bred stock at $1.00 per 14.
Mrs. Albert Miller,
Tel. East 1767. Station A, Los Angeles, Cal.

RED HEN RANCH

Eggs for sale from Prize Winning **Rhode Island Reds.** Send for circular. **W. Frank Greenleaf, Santa Ana, or 404 H. W. Hellman Building, Los Angeles, Cal.**

WHITE AND BUFF Leghorns

Old and young stock for sale. Eggs after January 1. Write for prices.
J. F. Sarmento, R.F D. Box 4, San Leandro, Cal.

Single Comb White Leghorns and Indian Runner Ducks

Eggs, $1.50 per setting. $6.00 per 100. Send for illustrated catalogue.
John P. Boden, 638 Second St., Watsonville, Cal.

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From prize winning and egg producing strains. Eggs, $1.50 and $2.00 per 15; incubator lots, $6.50 per hundred.
C. E. Chittick, 124 Avenue 34, Los Angeles, Cal.

Brown and White Leghorns

Prize winners at L. A. Show, '06. Eggs from good laying strains. Eggs, special matings, per 15, $2.00. Incubator lots, $6.00 per 100.
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Eggs for hatching from the famous J. W. Miller strain, Freeport, Ill. $1.25 per 15
CHAS. G. MILLER, 40 Elm St. WATSONVILLE, CAL

White Wyandottes and S.C. White Leghorns

Good layers. Trap nests used. Eggs: Wyandottes $1.50 to 2.50 per 15. Leghorns $1.50 per 15.
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High scoring stay white birds. 1st Cock L. A. 1906 show and other winners. Eggs $1.50 to $3. per 13. $10.00 per 100. Mount Holly Poultry Yards, Hollywood, Cal. E. W. Preston, Prop., Sunset, Hollywood, 901.

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Prize-Winning, Egg-Laying, Wealth-Producing Strain.
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BRONZE TURKEYS

Hart's strain. Winners of five firsts at Los Angeles Show, '06, and always winners wherever exhibited. Write for prices.
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I will sell a limited number of Indian Runner Ducks from my famous stock. Noted for their laying quality. Price, $2.00 for Drakes, $1.50 for Ducks,
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WILLARD POULTRY FARM, HYNES, CAL.

Mrs. F. T. Hungerford, Manager
14 Ribbons at The Last Los Angeles Show.

Indian Runner Ducks' Eggs:—$1.00 per 13, $3.00 per 50, $5.00 per 100. White Minorca and White Wyandotte eggs:—$1.50 per 15, $4.00 per 50, $8.00 per 100. Eggs carefully packed and shipped any where.

EGGS FOR HATCHING

from a heavy-laying strain of
SINGLE COMB WHITE LEGHORNS
I guarantee 100% fertile. Write for prices.
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Send for large circular fully describing these machines.
Sonoma-American Incubator Co., - Petaluma, Cal.

BARRED ROCKS
EXCLUSIVELY
Send for Sixteen-Page 1906 Catalogue
H. R. CAMPBELL
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Single Comb Brown Leghorns
Exclusively

Stock for sale and eggs for hatching. Eggs from first pen $2.00 per 15 eggs, second pen $1.50 per 15. Incubator lots for $6.00 per 100 eggs. They have always won first prize whenever shown. Large birds and heavy layers.
W. E. Mercer - - Ventura, Cal.

THE POULTRY BUSINESS IN CALIFORNIA

The State Agricultural Society has made some investigation of the chicken industry as conducted in California, and finds that while failures occur, as in all lines of industry, they are less frequent than in most other callings. On the whole, the chicken business in this State is growing and prosperous, and the communities where it is obtaining a foothold find their business being converted from a credit to a cash basis. Less capital is required to begin with in proportion to income than in most other lines of industry, and the returns are surer. Floods or drouths or unseasonable frosts do not materially affect the output. The market is close at hand, the pay is always cash, and the prices are generally satisfactory. Big farmers in California have been disposed to regard it as a little business, but its profits have begun to attract big men and superior talent.

On the question of capital required to start a poultry farm large enough to comfortably support a family of say five persons (man, wife and three children), we have some figures from Colonel L. C. Byce, of Petaluma, who has been identified with the business in that great poultry center almost from its infancy, who has had great opportunities for a study of the industry, and who may be regarded as an authority.

Land required, from three to five acres, five preferable; cost, approximately $500. Character of land, sandy or gravelly soil preferred, next best sandy loam, adobe least desirable. Land should have natural drainage, and if the slope is toward the east so as to have the benefit of the early morning sun, so much the better. Cost of five-room cottage, $1,200 to $1,500, according to finish; barn suitable for horse and cow, $150; poultry houses, $20 per 100 fowls, or $240 for 1,200; a six-foot, two inch mesh wire fence, about 15 cents per running foot, for five acres $280; horse, $150; cow, $50; wagon, $100; well, pump, pipe, and household furniture, $250; poultry stock, $500; incidentals, $30.

These figures, which are based on the cost of buying all material and hiring all help, counting the house $1,250, aggregate $3,600. They mean good land, a good house, a good horse, good wagon, good cow, good stock, good fence and fairly good outbuildings. A family can start with a much cheaper house, with a poorer horse and poorer wagon, and other articles of less cost, and thus cut the total very materially; or by the man and his boy giving a hand in helping to build the house, the fences, the barn, and the chicken houses, the quality of the articles in the first estimate can be had at a very much less cash outlay.

On this place one acre can be devoted to family orchard, garden, stable yard, and house yard, and four acres to poultry. Colonel Byce says, "This will suffice to keep from 1,000 to 1,500 laying hens. Usually one can keep 300 to 400 laying hens to the acre of land. Of course, where it is desired to raise a number of small chicks calculation must be made for them. One half acre of ground is enough land on which to raise chicks to replace the old fowls." It must be borne in mind that the business requires diligent and intelligent care, and the more chickens one undertakes to maintain on any given sized piece of ground the more vigilance

$1500

For the above sum, Captain Mitchell of Santa Barbara will sell his poultry business and good will. The outfit consists of 1000 Standard Bred S. C. White Leghorn laying hens and pullets and their fixtures, i. e., Brooders, houses, Posts, 6 foot "Union Lock" Fence Wire, Etc., Etc.

Sales of eggs for hatching average 14,000 per year at $70 per 1000, and the net income per annum for the last four years has been from $1000 to $1500. For further particulars apply to

Captain Mitchell, Rural No. 1, Santa Barbara

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WHITE WYANDOTTES
Stock For Sale, $1.50 and Up. Prize Winning Strain
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West Coast Chick Feed

A perfectly balanced ration for the growing chicks. All pure food, no filler, no waste, hence cheapest, Keeps them growing and healthy. Made by
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200-250 Egg Fowls **WHITE WYANDOTTES** 16 Prizes San Francisco

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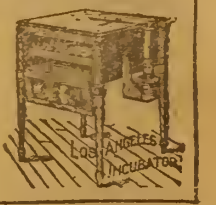

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Made in all sizes and for all purposes. We show here the Oliver Portable Poultry House. 4 feet wide, 5 feet long, 3 foot wall. **Send for Catalogue,** which gives photographs, Prices and weights of other buildings
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Don't believe all we say, but just enough to buy our Poultry Foods

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GUARANTEED ANALYSIS:
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Made of Clean Beef Bones, surplus fat removed. Cleanest Raw Bone on the Market.

Pure, Clean Animal Matter Poultry Foods
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When writing to Advertisers Please mention Cultivator

is required in keeping the place clean.

It is safe to estimate that the cost of feed will average $1 for each hen per year. The more green feed the garden produces the more this figure can be reduced.

"The profits," Colonel Byce says, "depend much on the man—the care, attention and intelligence he puts into the business." Some are making as high as $2.25 per hen per annum, but $1.50 per hen is a good average. Some, from lack of attention and careless habits, struggle to get along; others, more shiftless, fail entirely. In this it is like all other business. Most men, however, do well and many make money. On the whole, the business is profitable, and for the frugal and intelligent man with limited capital, affords a betetr income in California, along with a more agreeable occupation, than almost any other industry.

In this connection it may be mentioned that notwithstanding he improved methods adopted and other stimulus to the business in late years, the average price of eggs in the United States for 1904 and 1905, about 25 cents, is higher than since the war period, when the average jumped from 15 cents in 1862, to 20 cents in 1863, to 28 cents in 1864, and to 35 cents in 1865, the highest ever recorded. After that the price gradually lowered to an average for the period from 1870 to 1900 of about 20 cents per dozen. Since 1900 the prices have gradually and uniformly tended upward.

Respectfully,
J. A. FILCHER,
Secretary, State Agricultural Society.

WHAT KEPT THE TWINS QUIET?

It was something unusual, this period of prolonged quiet.

Mama Elliott had looked out of the window repeatedly and seen the dear little figures trudging contentedly side by side; had noted their many trips to the stone pile, and watched them anxiously as they crept through the bars and crossed the yard to the straw stack together.

"They are on an egg-hunting expedition, the dearies," she mused; "how delighted they will be if they find a new nest. I hope they will not break any of the eggs.'

But, no; another glance revealed the two busy little figures returning with tiny armfuls of straw—struggling through the bars, little Betty's palmetto hanging by its string down her back, and her curly hair full of straw bits and chaff, and Paul waiting patiently on the other side laden with straw also. Ponto stood by, wagging his tail leisurely, waiting, also.

Mama Elliott smiled tenderly at the pair through the window. "Playing livery barn again," she thought, "and filling the pony's manger. Well, I'll let them play a little while longer while I finish this work,' and she glanced at the clock.

Half an hour passed ,and a strange quietness seemed to settle over garden, yard and orchard. The twins had vanished, and no merry chatter or calls for "breddy butte," or "tookies," had interrupted the busy worker for another half hour.

"I must call them now, or send Mab to look after them," and stepping to the door she called: "Paul, Pau-l-l! Betty, Bett-e-ee! where are you, dearie? Answer mama."

But no answer came back, and no familiar little figure appeared in answer to her repeated calls.

"I wonder where Ponto is?" she queried; "surely no harm would come to them without his making a fuss," and snatching her sun-bonnet from the peg, she hurried out through the garden—out into the barnyard—past the pony's stable—still calling and looking anxiously into. all their favorite playhouses.

No Betty, no Paul, anywhere to be seen. Back again through the stackyard, garden and orchard, down by the duck pond hidden by the willows, still calling for Betty and Paul, wandered mama Elliott, with a sinking heart.

"I shall have to blow the horn for papa and the boys, if I do not find them soon,' she said to herself.

"I wonder where Ponto is? He certainly is with them; or was, the last time I saw them."

"Here Ponto, Ponto, Ponto!" she called. "Where are you, old fellow?"

"Good dog," she exclaimed, as she saw him appear at the old sheep-cote door; "where are the twinnies—where is Betty? Come here, good fellow."

For answer Ponto set deliberately down and swept the ground with his tail, and yes, mama Elliott thought he atcually smiled as he looked backward over his shoulders.

"In there, are they?" she said, as she stepped quickly forward, stopped short and smiled too.

Then she laughed outright, for there, seated demurely on two little boxes filled with straw and a few smooth stones for eggs, sat the twinnies, Paul and Betty, one on each side of Johanna, the old grey goose, who, with an eye on each twin, was calmly occupying the middle nest and tending to the business of keeping the ponderous goose eggs warm.

"Sssh! Sssh! ma!" said Betty, "you mustn't 'sturb her." "We's keeping Johanna comp'ny," added Paul; "and helping her hatch."—Farm Journal.

BONE MEAL—GREEN BONE

Green cut bone undoubtedly increases the egg production, and it also materially reduces the demand for grain, but bone meal, containing as it does but little water, ground so that it is about the size of a kernel of wheat, is always ground from dry bones and while it helps egg production some is not so digestible and is not to be compared with green cut bone. We feed both and use the bone meal mixed with the grit material, for the fowls will not overeat of it as they will of the green cut bone if given an opportunity. Of the latter we find it best to grind it fine, using fresh bones with a little meat clinging to them, and mix it with the grain food, using about one-eighth of the cut bone to seven-eights of the grain and feeding daily. Sometimes we find that some of the fowls are made a little sick eating it and the ration is then cut down; this is especially true when there is considerable meat ground with the bone. We use it in small quantities, scattered through the chaff on the scratching house floor, and when so used it takes the place of the grain which would otherwise have been used. Get a bone cutter and experiment carefully with the green cut bones, using them in increasing quantities until the results tell you to stop.

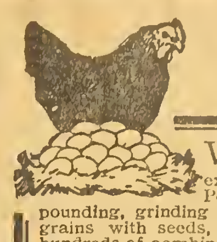
BOTH DANGEROUS.

There are two kinds of exposure to which chicks may be subjected and one is no less injurious to them than the other—exposure to the extreme heat of the sun and exposure to rain and stormy weather. It must be the object of the chick raiser to protect the young and tender birds, as well as those which are more advanced, by affording shade from the heat of the sun and shelter from wind and rain, and this can be done by both natural and artificial shelters. It is a good plan to have the rearing ground adjacent to a wood or bushes, which will shelter the birds from the prevailing winds, but in the use of suitable coops there is much that can also be done toward providing comfort. In any case the two elements of danger in the life of chicks are too hot sun and too cold winds.

Some seasons there is practically no profit in some of the branches of general farming, but poultry keeping, as a branch of farm work when properly managed will always be found to pay a good profit. It is a line of work that does not need to interfere much with the other farm work and still will bring some returns every month in the year. Those who have given it a fair trial have, with few exceptions, pronounced poultry keeping the most profitable of all the branches of farm work. It is destined to occupy a more and more prominent place in agriculture.

Blue Andalusian Eggs
$1.50 for 15, $6.00 per 100. Free range. I raised and sold cockerel winning first prize at late L. A. poultry show. Stock. **Mrs. J. S. Duff, 3145 S. Hoover St., Los Angeles, Cal.**

Baby Chicks
Reduced Price
Thoroughbred White Leghorns, in orders of 100 or over, $8 00. Less than 100 orders, 10c each. Order 500 or 1000 **now.** Terms cash.
Wm. A. Green, Azusa, Cal.


No Results No Pay
WE have spent a vast amount of money experimenting with Poultry Feeds—compounding, grinding and mixing different grains with seeds, alfalfa and meat in hundreds of combinations. Then feeding it and watching what happened.
The result of this time and money is
Purina Poultry Feeds
They will cause a hen to lay all the eggs she should, day after day, year after year, winter and summer, and will keep her healthy and vigorous every minute.
And they will do it every time—not just once in a while.
But don't take our word for it—try the Purina Feeds on your hens at our expense.
If the results don't come, just tie up the bag and write us and we'll return every penny of your money and tell you where to send the balance. You are not out a cent in making the trial, for we will deliver through your dealer or direct, FREIGHT PAID, and the feed used in testing will cost you nothing.
Ask for particulars about our FREE TEST Plan. Write today—you can't afford to wait.
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PACIFIC COAST MANUFACTURERS
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PURINA POULTRY FEED

Buff Wyandottes
Eggs from pens mated with 2nd prize Cockerel or 2nd prize Pen L. A. Show, $2.50 per 15. Stock and yards at San Gabriel. **Wm. J. Bodger, 251 S. Main St., Los Angeles, Cal.**

WHITE MINORCA EGGS
Best of Stock. Great Layers.
$1.50 setting, $8 100, $65 1000.
S. W. MORGAN,
Sunnyside, San Diego Co., Cal.

Mountain View Poultry Ranch
S. C. White Leghorns—Heavy layers. Eggs, $1.50 per 15, $5.00 per 100.
Indian Runner Ducks—Males for sale. Eggs, $1.00 per 13, $3.00 per 50, $5.00 per 100.
Mrs. J. L. Updyke - Fullerton, Cal.
Successor to Jacob Kreger

Fairview Poultry Yards
Silver Laced Wyandottes—My breeders include 1st prize cockerel, 1st, 2nd and 3rd pullet at the late L. A. show; 1st cockerel at San Diego and 1st hen at L. A., 1905. Eggs for the remainder of the season, $1 per 15.
White Plymouth Rocks—Eggs from choicest pen headed by Fairview Prince, a son of our best laying hen, $1 per 15 for balance of the season.
A. E. NELSON EL MONTE, CAL.

Get More Money for Your Eggs

Hager's Egg Preservative is unquestionably the only one on the market that will keep ***fresh*** eggs ***fresh.*** It costs ***only one cent per dozen,*** sold on a strict guarantee to do as claimed or money refunded.
Write today for booklet with full instructions and ***sample package.***
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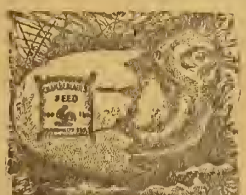
"Nothing Just as Good"
World's Chick Feed of To-Day. The only original **Dry Chick Feed.** All others are worthless imitations. **Chamberlain's Perfect Chick Feed** was used exclusively at the great St. Louis World's Fair during the 7 months. This the highest compliment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.

"Nothing Just as Good"
CHAMBERLAIN'S PERFECT MASH EGG FEED,
THE WORLD'S GREATEST EGG PRODUCER.
GERMAIN SEED CO.,
Pacific Coast Agents. LOS ANGELES, CALA,
SPECIAL PRICES ON TON LOTS.
Distributing Agents: FREDERICK BROWN, San Jose; CHAS. H. NEARPASS, San Diego; CHANNEL COMMERCIAL CO., Santa Barbara and Ventura.

General Agriculture

PLOWING TOO WET OR TOO DRY.

Sandy soils are usually not injured by handling when wet; but the case is different with clay soils. A fair quality of brick can be made from any heavy clay soil by working it thoroughly when wet and then drying it in the sun. The effect produced by working clay soils wet is known as puddling. Irrigation ditches in the West are puddled by first flooding them to make them muddy and then driving bands of sheep along in this mud. This makes the bottom impervious to water and prevents loss from leakage. If a clay soil is plowed, or even harrowed, when too wet, it is more or less puddled. In this condition it becomes cloddy and impervious to air and water. Old roadways that have been thoroughly puddled from traffic in all kinds of weather may be distinguished in fields many years after they have been plowed up and put into cultivation.

The proper time to plow land is when it is just moist enough to break up mellow, neither wet enough to leave a slick surface when rubbed by the moldboard nor dry enough to break up in large clods; or, as the southern farmer puts it, when the soil has a good season in it. If continued rain follows wet plowing, little harm follows; but hot, dry winds soon leave only a mass of unmanageable clods. In spring and midsummer plowing, particularly, it is of the utmost importance to run the harrow immediately after the plow. This prevents the formation of clods.

BUTTER AN OLD PRODUCT.

The word butter (butyrum) comes, according to Charles Toubin, from the Sanscrit but (to beat) and ura (milk). This precious substance consists in an agglomeration of the fatty globules extracted from the milk where they are in the state of emulsion through the churning operations. Cow butter is the only really good one. It is oily and rich, of a delicate and special odor, and of a pure, sweet and pleasant taste which reminds one of the nut tree. Butter, of which Paris uses more than one and a quarter million pounds worth annually, is an article of food the use of which goes back to the remotest antiquity. It is true that the Romans only used it as an external remedy unguentum, but the Hindoos and Jews were surefeited with it, and the savages of the north seem from all times to have made it the basis of their foods. The oldest Iceland poem relates how the bard Skidi dreamt one night that he asked in marriage Friggia, the goddess of Love, and that the god Odieu gave him as a wedding present a case full of butter.

The best butter is made in the provinces of Normandy and Brittany, but the mountains of the east also produce a white butter much appreciated by connoisseurs. Flanders, Holland, and England produce exquisite soft butter, because the agricultural population of these beautiful countries take great care not to feed their cows with anything which may give a bad taste in the milk. Furthermore, they possess in the highest degree that quality of cleanliness in every particular which is so indispensable to all farming industries of whatever kind.

The most delicate butter is made with fine cream which separates spontaneously from the standing milk. When the butter is beaten, all the buttermilk must then be removed—that is to say, the particles of whey and casein which cause it to go rancid and spoil the taste. The best way of doing this is to cut the butter into thing strips and kneading it for some time with rollers and beaters. May is the most favorable month for butter manufacture. Butter is a produce of the north, as the low temperature at which it melts makes its use difficult to the southern races, and their stomachs also have very little desire for fatty substances.

Butter becomes rancid very quickly, and bitter (strong butter) owing to the emission of butyric acid, produced by its putrid fermentation. Butter is preserved either by melting it in the water bath or by salting it with from one to two per cent of dry salt.

It is a very nourishing food and more easy to digest than animal fats, on account of the aromatic elements it contains. Emolient and laxative, it, on account of the quantity of carbon which it contains, assists the breathing functions, and is productive of animal heat. With bread and salt it supplies an incomparable hors d'aeuvre and is one of the most wholesome of foods

The fundamental support of cooking—a condiment of any number of dishes which it would be difficult to make without it—it gives to our foods a flavor and special digestibility. It facilitates the preparation of soups, meats, fish, vegetables, etc.; the fresher it is the better it is digested. It is the very best food for weak, debilitated and thin people, consumptive, diabetic, and nervous people, and those suffering from lung complaints.

SMOKE TO CALM BEES.

Beehives are now so constructed that they may be opened and their contents removed or changed about and examined without materially interfering with the actions of the bees. They frequently continue their labors even when the comb is held in the hand of the beekeeper.

One of the great improvement in modern beekeeping is the use of smoke to calm the bees, instead of killing them. In the up-to-date apairies a little instrument for puffing smoke is used for htis purpose.

A good smoker is indispensible to every beekeeper. See that it is in good order. When the fuel in it is well ignited, approach the hive and blow a few whiffs of smoke in at the entrance. Wait a minute, then blow a little more smoke until the bees set up a sort of roaring noise. Then gently commence to open the hive, and if the bees show a desire to come up, blow a little more smoke over the tops of the frames; this will drive the bees back.

Bees can be smoked too much, particularly when the queens are to be found. Just how much to give depends upon the disposition of the insects.—Exchange.

The California Compounding Co., 205 W. Taylor St., San Jose, handle exclusively the best parrafine oils, refined by the large independent oil refineries in Pennsylvania. Their business is not interrupted and they are able to fill all orders for their well-known spray without delay.

MIXING BRAINS.

"I never saw anything like the wonderful colors you get into your pictures," said the critic to a great painter. "How do you mix your paints?"

"With brains," said the artist.

Mix the ordinary with brains and you get the fine and the extraordinary; pig-iron becomes the steel-watch-spring; calves' feet are turned into the daintiest gelatine; and now we are told that the most remarkable roofing on the market today is obtained by treating long-fibre wool-felt by a similar mixing of brains.

J. A. & W. Bird & Company, of Boston, are responsible for this wonderful result.

Beginning with a foundation of highest quality wool-felt, they put it through a course of wool-mixing in which some of the other ingredients are a compound which is water resisting and alkali and fire-resisting, so that when the finished product is ready you receive a roofing that is better than shingles, tin, tar, or, in fact, anything that your grandfather or even your father ever knew.

It makes a roof that won't leak, won't rot, won't crack, won't melt and can't be set on fire by falling sparks.

The makers of this remarkable roofing have a booklet of photographs showing buildings of all kinds from Mexico to Maine that are todav proving this famous protection called Rex Flintkote Roofing.

Anyone who is interested and would like to know more and would like samples mav have them by addressing a postal to J. A. & W. Bird & Company, Boston, Mass.

WOODEN SOLES.

The convenience and protection afforded to workers in creameries, or rather places where wet cement has to be stood on all day, by heavy wooden soles is most acceptable to this class of workers. The O. J. Weber Co. has a full line of them in both boots, buckle shoes and even slippers. Drop in and take a look at them.

Smith's Cash Store, so long established in San Francisco, has not gone down in ruin. Their handsome six-story building near the Union Ferry Building was not damaged in the least by the earthquake, but a few hours later was totally destroyed by fire. Every particle of merchandise in the building was consumed. The firm is now established "Just around the corner" at No. 16. Steuart street on an L lot adjoining the original premises. Here has been erected a corrugated iron building stocked with goods and opened for business on the 8th of May. It illustrates the promptness with which business was resumed in the burned section.

Read the announcement of the Joshua Hendy Machine Works in this issue. Their temporary offices have been erected on the site of their factory at Bay and Kearney streets, San Francisco, and they are ready to supply orders on demand. While their down town offices were entirely destroyed by fire they are "still on earth'" and will build upon the ruins of their old a larger business than heretofore.

BALE YOUR HAY

WITH THE LATEST IMPROVED

"ECLIPSE"

FULL CIRCLE STEEL PRESS. TWO FEEDS PER CIRCLE. SHORTEST CRANK ARM AND 12-FOOT SWEEP MAKE IT THE MOST POWERFUL. LIGHTEST DRAFT. LARGE FEED OPENING. **ABSOLUTELY NO JERK.** THIS IS ONE OF OUR FINE LINE OF HAYING TOOLS. WRITE US AT ONCE.

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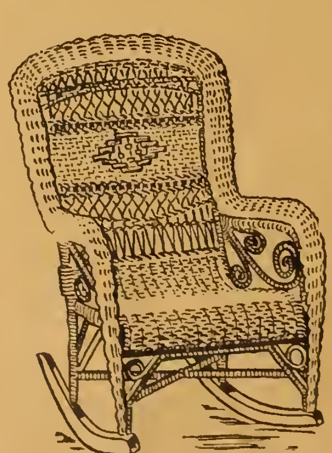

Solid Comfort
Rattan
Furniture

The coming months are the months we most enjoy the out-of-door life; the hours spent on a shaded porch or at a summer home.

Now is the Time to Select Your Summer Furniture

The Reed and Rattan Furniture is light and airy; ever suggestive of coolness, ease and comfort. It is the king of furniture you should secure for your future hours of leisure.

We have a large and varied assortment of rattan furniture of all kinds Choose while the showing is complete.

Niles Pease Furniture Co.

439-441-443 S. Spring St., Los Angeles, Cal.

Queries and Replies

MARKET FOR MUSTARD.

We believe that if N. W. G., Santa Maria, will communicate with Mr. O. T. Nobman, (box 100) of same address he may learn something to his advantage regarding the sale of mustard seed.

GARDEN FERTILIZERS.

Editor Cultivator:—Please answer the following in your garden department. 1. Is nitrate of soda a good lawn fertilizer? 2. What is the best liquid manure for roses and garden plants in general?—E. G. L., Riverside.

1. Nitrate of soda is far from being the best, being more of a stimulant, and must be used with caution. So many other fertilizers with a stable manure base are on the market that we would not advise the use of nitrate, but to those who wish to use some of the more soluble fertilizers for their lawn, we would recommend one pound of either nitrate of soda or sulphate of ammonia to three pounds of the muriate or the sulphate of potash. About 50 lbs. of the mixture is enough for any ordinary city lawn. First class commercial fertilizers are now on the market, for lawn use, that are both safe and sure, and also economical.

2. Probably the best all round liquid fertilizer is made from cow manure. Dilute to the color of weak coffee and apply not more than once a week. Such applications are more beneficial than stronger doses at longer intervals.

DODDER.

Editor Cultivator:—If barley and alfalfa are sown together, and dodder is among the alfalfa, how soon after alfalfa is up will the dodder show and how does it look?—Subscriber.

The dodder has seeds which take root in the soil and puts forth a shoot which winds itself around some living plant. As soon as the plant obtains a good start the shoot disconnects itself from the earth and derives its norishment from the juices of the plants to which it clings. In this parasitic state the dodder has no need for organs of nutrition of its own, and nature therefore takes them away. In the case of this weed we have, then, the degraded spectacle of a plant without a root, without a twig, without a leaf, and having a stem so useless as to be inadequate to bear its own weight. An average plant bears about 2,500 seeds, so that the increase is something startling. The plant is insignificant when young and not easily noticed, as the alfalfa and barley grow so much faster. It should be easily recognized by the above description. In color the stems are a beautiful clear yellow. The minute flowers are white.

"FORGET IT."

A bit of modern and significant street slang is thus phrased: "Forget it." It needs interpretation, as does nearly all slang. As the street gamin uses it he means: "You are wrong. You have misconceived the matter entirely. Now don't continue harping on that erroneous idea, but get your mind right and fixed on something worth while." So he says, "Aw, furgit it."

"I do not mind that people know so much," remarked our great humorist, "but I hate it that they know so much that is not so." And had he said this a little later he could have added the bit of slang, "Forget it."

A little group of enthusiasts wished to run a corn train through the State of Indiana. Forthwith the men who "knew the state best" came to them and assured them that the idea was impractical, that Indiana farmers were staid and set, not wont to rush out to hear any new thing that came along, that the effort would prove very disappointing. Notwithstanding this the enthusiasts promptly "forgot it" and the train went. And the farmers fairly mobbed it! The embarrassment was of too many listeners to be reached.

In Kentucky the former Commissioner of Agriculture had learned that the farmers there were set and slow and non-progressive, that they could not be reached, that it was not worth while to waste effort on them. A new commissioner "forgot it" and went after them with institutes and a special train to preach the gospel of good seed corn and alfalfa culture, and in ten days reached nearly 12,000 people.

In several states today the men in charge of agricultural colleges have learned that their constituents are slow, careless, giving them little support. They are believing that the successful agricultural colleges belong to a region farther west, or north, or south, or somewhere else. They have only a half heart to ask legislatures to equip them and no heart at all to ask the people to come to a short course. Ah, forget it! Forget it! Make fit those colleges. Make ready the gospel trains, make ready the short course. Forget that half faith, that paralyzing fear. Believe that the men in your own state are as other men, with red blood and needs and desires. Go after them with the right bait of enthusiasm and earnest wish to help them. See, then, if they do not respond. Forget it! Let the dead past bury the dead past. This is a new age, and a new opportunity is born every hour.

And you, farmer, knowing well that you have been an indifferent farmer in the past, that you have robbed your soil and wasted your opportunities, forget it. Refuse longer to believe that you are necessarily bound with a heritage of bad practice. Get out to the short course, read, study, reform your practice, shelter your animals, save the manure, buy a spreader, sow clover or alfalfa. Forget that you were a leech upon the earth; become a creator of wealth instead.—Breeders Gazette.

YEAR BOOK OF AGRICULTURE.

The government of Victoria, Australia, has issued their first Year Book of Agriculture, which seems to be quite up to the standard of our own publications. It is hoped to continue the publication from year to year, permanently, and judging by the favorable comments of the Victorian press and farmers, its perpetuity seems assured.

Veterinary

BY DR. W. J. OLIVER,
318 East Second St., Los Angeles

To the end that this department may be made as valuable to the subscribers as possible, we ask observance of the following: Be sure to state in full the history of the case, location of the disease and the conditions under which the animal has been kept just before and since the disease appeared. Give your name and address, which will not appear in the paper if you so request. No charge whatever is made for such questions as are answered through the columns of the Cultivator, but when an immediate mail answer is wished Dr. Oliver asks an additional fee of $1.00 and will give immediate attention and reply by mail. In such case write Dr. W. J. Oliver, 318 E. Second St., Los Angeles, Cal.

Questions should be in by Monday to be answered in the following Friday's paper.

BLINDNESS.

Editor Cultivator: I have a big half Maltese cat over whose eyes there is growing a thick white-blue skin. It covers about half of both his eyes. It grows faster every day and he will soon be blind. I want you, if you can, to please write and tell me what to do for him. He is a great pet and he catches his food and stays out of doors most all the time. The skin or scum looks like a cataract that comes on people's eyes.—L. T., Porterville.

Make a solution of nitrate of silver, five grains; water, one ounce; touch the parts once a day, using a camels hair brush.

MANURE SPREADERS.

One of the advantages the farmers of today have over those of past generations is in the use of improved farm machinery. Inventive skill and genius have been brought to bear on practically every farm operation so that today the farmer has only to set the machinery on the farm in motion ot accomplish in a few hours, the work of weeks a generation ago. One of the great "bugabears" of the farmers has been the removal of the barn yard manure from the yard to the field and properly distributing it. This labor has, in recent year, been very greatly simplified by the introduction of the manure spreader. The manure is thrown from the stable into the box, the team attached, the machinery set in motion, and the finely divided particles of manure are scattered over the land. There is no implement on the modern farm today which accomplishes its work more satisfactorily and with such pleasure to the owner as the modern manure spreader.

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Fastest drillers known. Great money earners!
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To Raise Fine Birds
You must first of all provide comfortable quarters.
Profitable Egg Getting...
success in poultry business demands it. It is not necessary to invest a fortune in your poultry house. It is not necessary to build a heavy expensive poultry house.
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Makes a Light Structure—solid, strong and absolutely weather-proof. That wear-proof surface of hard flint sand means years and years of extra wear without additional cost. Send for samples and prices.
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Household Department

TO A DOG.

When some proud son of man returns to earth,
Unknown to glory, but upheld by birth,
The sculptor's art exhausts the pomp of woe,
And storied urns record who rests below;
When all is done, upon the tomb is seen,
Not what he was, but what he should have been:
But the poor dog, in life the firmest friend,
The first to welcome, foremost to defend,
Whose honest heart is still his master's own,
Who labors, fights, lives, breathes for him alone,
Unhonor'd falls, unnoticed all his worth,
Denied in heaven the soul he held on earth:
While man, vain insect! hopes to be forgiven,
And claims himself a sole exclusive heaven.
Oh man! thou feeble tenant of an hour,
Debased by slavery, or corrupt by power,
Who knows thee well must quit thee with disgust,
Degraded mass of animated dust!
Thy love is lust, thy friendship all a cheat!
Thy smiles hypocrisy, thy words deceit!
By nature vile, ennobled but by name,
Each kindred brute might bid thee blush for shame.
Ye! who perchance behold this simple urn,
Pass on—it honors none you wish to mourn:
To mark a friend's remains these stones arise;
I never knew but one,—and here he lies.
Lord Byron.

ONLY A DOG.

"Only a dog!" You wonder why
I grieve so much to see him die,
Ah! if you knew
How true a friend a dog can be,
And what a friend he was to me,
When friends were few!

"Only a dog—a beast," you sneer;
"Not worthy of a sigh or tear."
Speak not to me
Such falsehoods of my poor dumb friend
While I have language to defend
His memory.

Thro' ups and downs, thro' thick and thin,
My boon companion he has been
For years and years.
He journeyed with me miles and miles,
I gave him frowns, I gave him smiles,
And now, sad tears.

Before my children came, his white
Soft head was pillowed every night
Upon my breast.
So let him lie just one time more
Upon my bosom as before
And take his rest.

And when a tender love awoke,
The first words my baby spoke
Was "M-a-t." Poor Mat!
Could I no other reason tell,
My mother-heart would love you well
For only that.

Together boy and dog have laid
Upon my lap; together played
Around my feet,
Till laugh and bark together grew
So much alike, I scarcely knew
Which was most sweet.

Ah! go away, and let me cry,
For now you know the reason why
I loved him so.
Leave me alone to close his eyes,
That looked so wistful and so wise,
Trying to know.

At garden gate or open door
You'll run to welcome me no more,
Dear little friend.
You were so kind, so good and true,
I question, looking down at you,
Is this the end?

Is there for you no "other side?"
No home beyond death's chilly tide
And heavy fog,
Where meekness and fidelity
Will meet reward, although you be
Only a dog?

"He has no soul!" How know you that?
What have we now that had not Mat,
Save idle speech?
If from the Bible I can read
Him soulless, then I own no creed
The preachers preach.

My dog had love, and faith, and joy—
As much as had my baby boy—
Intelligence;
Could smell, see, hear, and suffer pain.
What makes a soul if these are vain?
When I go hence,

'Tis my belief my dog will be
Among the first to welcome me.
Believing that,
I keep his collar and his bell,
And do not say to him farewell,
But good-by Mat,
Dear, faithful Mat!
—Pearl Rivers.

("Pearl Rivers" was Mrs. Nicholson, for many years editor and proprietor of the New Orleans Picayune. —Ed.)

EULOGY ON THE DOG.

One of the most famous speeches ever made by the late Senator Vest of Missouri was made in the course of a trial of a man who had wantonly shot a dog belonging to a neighbor. Vest represented the plaintiff, who demanded $200 damages. When Vest finished speaking, the jury, after two minutes' deliberation, awarded the plaintiff $500. The full text of the speech is printed below:

"Gentlemen of the jury: The best friend a man has in the world may turn against him and become his enemy. His son or daughter that he has reared with loving care may prove ungrateful. Those who are nearest and dearest to us, those whom we trust with our happiness and good name, may become traitors to their faith. The money that a man has he may lose. It flies away from him, perhaps when he needs it most. A man's reputation may be sacrificed in a moment of ill-considered action. The people who are prone to fall on their knees to do us honor when success is with us may be the first to throw the stone of malice when failure settles its cloud upon our heads. The one absolutely unselfish friend that man can have in this unselfish world, the one that never deserts him, the one that never proves ungrateful or treacherous, is his dog.

"Gentlemen of the jury, a man's dog stands by him in prosperity and in poverty, in health and in sickness. He will sleep on the cold ground, where the wintry winds blow and the snow drives fiercely, if only he may be near his master's side. He will kiss the hand that has no food to offer, he will lick the wounds and sores that come in encounter with the roughness of the world. He guards the sleep of his pauper master as if he were a prince. When all other friends desert he remains. When riches take wings and reputation falls to pieces he is as constant in his love as the sun in its journey through the heavens. If fortune drives the master forth, an outcast in the world, friendless and homeless, the faithful dog asks no higher privilege than that of accompanying him to guard against

NECESSITY VS. LUXURY
The day has gone by when the farm telephone is considered a luxury—time was and not so long ago at that, when a telephone in a farm-house was looked upon as such. ***Today it is a necessity.***
THE WILLIAMS FARM TELEPHONE
has had a lot to do with bringing about this change, making it easy for the farmer to form his own telephone company at no great cost—keeping him ever in touch with his doctor, dealer, banker, freight-agent, and all others in a business way—to say nothing of the social side, putting him in communication with his neighbors at will. Think it over and write us for booklet "Over the Wire." THE WILLIAMS TELEPHONE & SUPPLY CO.
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COLONIST RATES TO CALIFORNIA
Santa Fe
Will be in effect every day, Feb. 15 to April 7, and Sept. 15 to Oct. 31, 1906, from all points in the east and south.
Following are a few:
Chicago........................$33.00 Kansas City & Leavenworth $25.00
St. Louis........................ 30.00 St. Joseph & Atchison....... 25.00
Galveston .... 26.45 Council Bluffs & Omaha..... 25.00
Dallas, Houston and Fort Worth........................ 25.00
Nearly all points in Kansas, Oklahoma and Indian Territory... 25.00
Colonist rates are also in effect from all points east of Chicago and south of the Ohio river.
Santa Fe Agents in California will take deposits of money to cover price of tickets, which will be promptly furnished to passengers at any point from which these rates are in effect.
California illustrated literature mailed free to any address or may be had from Santa Fe representatives.
Tourist Sleeping Car Lines
Colonist tickets are honored in tourist sleeping cars which run via the Santa Fe to Los Angeles and San Francisco.

Choice of
MANY ROUTES
East and West
SOUTHERN PACIFIC
SUNSET Via New Orleans and El Paso
OGDEN Vian an FraScisco
SHASTA Via Portland
Pullman Vestibuled Trains Daily. Personally Conducted Tourist Excursions via all routes every day in the week at Reduced Rates. The SOUTHERN PACIFIC gives you choice of many routes from the northern boundary of the United States to the Atlantic Coast, so that you may go one way and return another, with varied scenery and climatic conditions.
Full information at 261 S. Spring St., Los Angeles, or from any agent
SOUTHERN PACIFIC

A Delightful Way to Go East
Is Via The
Scenic Salt Lake Route
Some day you will go Back East again. Perhaps this summer. When you do, why not go over the new short line to Salt Lake City, thence over the Union Pacific or the Rocky Mountain Scenic Line, Denver & Rio Grande. There's
BEAUTIFUL SCENERY along the line through California, Nevada and Utah. 'Tis not entirely a desert region. You will be surprised when you see the reality.
SEE SALT LAKE.—No extra expense is necessary to stop over a day at Salt Lake City. There's much to interest you in the old Mormon City.
THROUGH SLEEPERS are run on both Salt Lake Route trains from Los Angeles. THE LOS ANGELES LIMITED with standard and tourist runs solid though to Chicago via Ogden, Union Pacific and North Western lines. There's nothing finer in train equipment.
SALT LAKE ROUTE
THE OVERLAND carries every day tourist sleepers from Los Angeles to Chicago via D. & R. G. & Burlington Route, to St. Louis via Union Pacific & Wabash Railroads and to St. Louis twice a week via D. & R. G. & Missouri Pacific Railways. There is also every day a Standard Sleeper through to Denver via D. & R. G.
DINING CARS are carried on both THE LOS ANGELES LIMITED and OVERLAND in which meals are served a la carte. You pay for what you want at reasonable prices and the service is the best possible.
EREE CHAIR CARS are run on THE OVERLAND to Salt Lake City connecting with similar cars on other lines there. These cars are very comfortable. Save sleepers expenses if you wish.
EASTERN EXCURSIONS at much reduced rates will be run by the Salt Lake Route this summer. From all stations in California tickets will be sold as follows for round trip:
May 25, 26 and 27—New Haven, Conn. Rate 92.10. Return limit Aug. 31st.
June 6 and 7—Louisville, Ky Rate $75.75. Return limit 90 days.
June 6 and 7, July 2 and 3, August 7, 8 and 9.—Chicago and Duluth $72.50. St. Paul and Minneapolis, $70 00. St. Louis, Memphis and New Orleans, $67.50.
Missouri River points and Fort Worth and Houston, Tex., $60 00.
Also reductions to Atlantic Coast Cities. See Salt Lake Route agents for full particulars and plan your trip to travel over this route either going or returuing.
T. C. PECK, A. G. P. A., Los Angeles, Cal.

danger; to fight against his enemies, and when the last scene of all comes, and death takes the master in its embrace and his body is laid awav in the cold ground, no matter if all other friends pursue their way, there by his graveside will the noble dog be found, his head between his paws, his eyes sad but open in alert watchfulness, faithful and true, even to death."

A REMARKABLE BUT TRUE STATEMENT.

Hon. Francis S. Hesseltine of the Boston Bar sends the following written to him by Dr. J. Langdon Sullivan, a prominent physician:

"The facts you ask for are as follows: Twenty years ago a gentleman brought to my office a large, very handsome intelligent spaniel dog whose nigh foreleg was badly broken, the bone being grown out of place. On the master's assurance that the dog would not bite me I set the leg. Drawing the bony fragments into place caused severe unavoidable pain. The animal whimpered, but displayed no anger, and allowed the dressing to remain undisturbed until I removed it when firm union had resulted. I saw no more of my canine patient or of his owner for two years. Then (again on a summer's morning) I heard a loud scratching at my office door. I opened it and there stood my old spaniel friend, wagging his tail. Beside him stood a fine black-and-tan with a round French nail driven clear through his right paw. I patted the spaniel, called both dogs in, removed the nail and sent both away happy, trotting side by side as if nothing had happened. I have never seen anything of either since."

OAK POISONING.

At this season poison oak cases are very numerous. As the camping season opens and picnics become numerous this painful and distressing affection will be common in all parts of the State.

Some years ago the Department of Agriculture at Washington published a bulletin with relation to poison oak and poison ivy, giving the results of a special scientific investigation. The cause of the trouble was stated to be a recently discovered non-volatile oil called toxicodendrol. It is very irritating to the skin in a manner only too well known. Since it cannot be dissolved in water, washing is of little use. It can, however, be dissolved and converted into a soap by the addition of alkalies such as ammonia, washing soda and caustic potash or soda. It is also readily dissolved in alcohol. All these may be used in case poisoning should occur, but there is a better remedy which may be made as follows: In a bottle of grain alcohol put and shake as much acetate sugar of lead as will dissolve: then add a little more lead, so that when shaken the mixture is milky. When needed, rub the shaken mixture upon the affected parts several times a day until all irritation ceases. If too strong, the mixture should be diluted with water, but more lead should be added.

Should poisoning occur and this preparation not be obtainable, hot soapsuds, with some soda or other alkali added to it, may be used. This should not be relied upon unless the poisoning is very fresh. Advanced cases should be treated with the above remedy.—Sacramento Bee.

PTOMAINE POISONING.

That our readers may be warned of dangerous combinations of foods we print the following dispatch sent out from Richmond, Ind., last week:

Richmond, Ind., May 11.—Miss Clara Reckers, 20 years of age and prominent in society, died last night from ptomaine poisoning. An autopsy today showed that a combination of spinach and strawberry shortcake had resulted in chemical changes which caused death. Physicians worked for hours in an effort to save her but she expired in great agony.

She had partaken freely of spinach at the noon meal and at supper she dined chiefly on shortcake and rich cream. An hour later she was in spasms.

Examinations of remnants of both foods show that neither contained any poison, but that death was due to combinations.

Physicians say the same effect would be produced by eating freely of bananas then drinking whisky, the combination which killed Patrick Gilmore, the great bandmaster.

* * *

Of course this is an extreme case, for spinach is easily digested and in a normal stomach would not have remained till supper time.

Courtesy Boys and Girls Magazine

Chums

CONCERNING COLD BATHS.

Cold baths in the morning are undoubtedly beneficial, but only to those persons who have sufficient vitality and nervous force to insure good reaction.

Many persons who are greatly refreshed by their morning cold bath feel tired or languid two or three hours afterward. When this occurs they should leave the baths severely alone.

Persons who have an abundance of blood and flesh, who are lymphatic or sluggish in temperament and whose nervous force is not depleted can take a cold bath to advantage.

Those who are inclined to be thin, whose hands and feet become cold and clammy on slight provocation, who digest food slowly, and assimilate it slowly with difficulty, who are nervous and who have much on their mind, should avoid early morning cold bathing,

For such, a warm bath before retiring at night is recommended.

SEWING ON A BUTTON.

It is bad enough to see a bachelor sew on a button, but he is the embodiment of grace alongside of a married man. Necessity has compelled experience in the case of the former, but the latter has always depended upon some one else for this service, and fortunately, for the sake of society, it is rarely he is obliged to resort to the needle himself. Sometimes the patient wife scalds her right hand, or runs a sliver under the nail of the index finger of that hand, and it is then the man clutches the needle around the neck, and, forgetting to tie a knot in the thread, commences to put on the button. It is always in the morning, and from five to twenty minutes after he is expected to be down street. He lays the button exactly on the site of its predecessor, and pushes the needle through one eye, and carefully draws the thread after, leaving about three inches of it sticking up for leeway. He says to himself, "Well, if women don't have the easiest time I ever see." Then he comes back the other way, and gets the needle through the cloth well enough, and lays himself out to find the eye, but in spite of a great deal of patient jabbing, the needle point persists in bucking against the solid parts of the button, and finally, when he loses patience, his fingers catch the thread, and that three inches he had left to hold the button slips through the eye in a twinkling, and the button rolls leisurly across the floor. He picks it up without a single remark, out of respect for his children, and makes another attempt to fasten it. This time, when coming back with the needle, he keeps the thread and button from slipping by covering them with his thumb, and it is out of regard for that part of him that he feels around for the eye in a very careful and judicious manner; but eventually losing his philosophy, as the search becomes more and more hopeless, he falls to jabbing about in a loose and savage manner, and it is just then the needle finds an opening, and comes up through the button and part way through his thumb with a celerity that no human ingenuity can guard against. Then he lays down the things, with a few familiar quotations, and presses the injured hand between his knees, and then holds it under the other arm, and finally jams it into his mouth, and all the while he prances about the floor and calls upon heaven and earth to witness that there has never been anything like it since the world was created, and howls, and whistles, and moans, and sobs. After awhile he calms down, and puts on his pants, and fastens them together with a stick, and goes to his business a changed man.

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SECURITY SAVINGS BANK
LARGEST SAVINGS BANK IN SO. CALIFORNIA
Total Resources, $15.000,000.00
FOURTH AND SPRING STS.
LOS ANGELES, CALIFORNIA

BURN AIR AND SAVE FUEL
You can do it with the
HAGUE IMPROVED DOMESTIC OIL BURNER
It burns more air than any other burner on the market. Can be fitted to stoves, ranges, furnaces, and all kinds of heating systems. Simplest and most economical burner on the market. If you want the most heat for th least money, write for information to
Hague Domestic Oil Burner Co , 810 So. Spring St., Los Angeles, Cal.

WITH A SIEVERT OIL BURNER
You can burn 100,000 cubic feet of air with every 130 gallons of oil, this means perfect combustion. To burn more than 100,000 cubic feet of air with 130 gallons of oil, there is a decided loss of heat. To burn less than 100,000 cubic feet of air there is a loss of fuel.
The only safe and reliable burner on the market.
Send for full particulars.
SIEVERT OIL BURNER CO. 1005 N. Alameda St. Los Angeles, Cal.

VULCANITE ROOFING

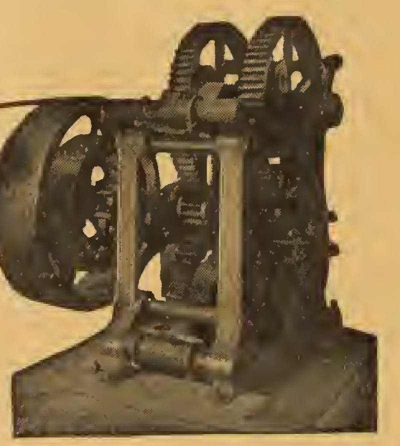
JUST THE THING ALL THE YEAR ROUND

Non-conductive of heat and cold. Does not buckle—lays perfectly smooth. A material which is at once light, strong, durable and cheap, and at the same time water-proof, wind-proof, acid and fume-proof. Also used for covering outside of buildings, floors of warehouses, offices, etc. Requires no paint; is permanent and inexpensive. Comes in various weights.

Samples and price list upon application.

C. SCHEERER & CO.
255 S. LOS ANGELES ST.
LOS ANGELES, CAL.

The Pomona Pump



☐ The New Pomona Pump is now being manufactured with machine cut gears and machine cut steel or bronze pinions. The pump fitted with this kind of gearing runs as smooth as a clock and there is absolutely no noise or vibration. The company have recently taken contracts for installing their largest sized pump with this class of gearing for the Artesian Belt Water Company of San Dimas, Western Water & Power Company of Glendora and other large irrigation companies. They are required to furnish these pumps with cylinders up to 12 inches in diameter and 72 stroke which has capacity of over 60 Miner's inches of water. The valves are made entirely of phosph r bronze with ground metal taper seats so there is very little obstructiin to the water in passing through them and it is impossible to clog them with sand. These, in connection with machine cut gears, in the pump head, make a strictly high grade pumping outfit and the oest by a long ways of anything on the market today.

This head and valves are both protected by United States patent. Beware of infringing as both manfacturer and user are liable.

The company has recently installed one of their latest improved heads for the Santa Anita Land Company, a subdivison of the Baldwin Ranch. Below is what the owners have to say about it:

"The new 38 pump you installed for us on our tract on the E. J. (Lucky) Baldwin Ranch is giving us satisfaction in every way. We think we have the very best that money will buy. Both as regards to pump, material used and installation. We made an excellent change when we removed the pump we had been using and installed your make."

We have pleased these people and there is no reason why we cannot please you.

Send for catalog to

The Pomona Manufacturing Co.
Pomona Ca'ifornia

OPIUM and **Whiskey Habits** cured at home without pain. Book of particulars sent **FREE. B. M. Woolley, M.D., Atlanta, Ga.**, 103 N. Pryor St.

When writing advertisers mention Cultivator.

The Produce Markets

Los Angeles Markets.

Los Angeles, Cal., June 6, 1906.

Butter.

Local Creamery, per roll	.45
Valley Creamery, fancy	.42-45
Coast, Fancy	.40@42½
Coast, Choice	.37½@40
Fancy Eastern Cubes	.24
Cooking	.18

Cheese.

Cal. 3-℔. hand	.18
Cal. Young America	.17
California Anchor, Large	.16
Northern	.13-14
Domestic Swiss	.20
Imported do	.28

Eggs and Poultry.

Eggs, fresh ranch	.22
Northern Candled	.18

There is more difference between prices to producers of poultry and to the retailers of poultry than in most other lines. The following are average prices which dealers pay to producers for live weight:

Hens, per ℔	.13
Young roosters, per ℔	.17
Fryers	.17
Broilers, per ℔	.17
Old Roosters	.8
Turkeys	.19
Geese	.12
Ducks	.12

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock:

Hogs, 200 ℔	.6
Prime Steers	.4
Cows	.3¾
Calves, per ℔	.4½-5
Sheep, ewes, per head	.4.25
Lambs, per head	.3.25
Wethers	.4.75

Potatoes.

Burbanks, fancy	1.60@1.75
Salinas, choice	1.75@2.00
Hemets	$1.80
New, per sack	$2.00

Sweet Potatoes.

White	$4.00

Vegetables.

Onions, fancy Nevadas	2.50@3.00
New Onions	2.50@3.50
Bermuda	2.50
Garlic	.8@10
Wax Beans	.4@5
Rhubarb, per box	.75@1.00
Parsnips, per doz	.35
Cauliflower, per doz	.85
Asparagus	.6@7
Lettuce, per dozen	.10@15
Bell Peppers	.15@18
Chili Peppers, Green	.15
Chili, dried	.20
Cucumbers, per doz	.30@75
Radishes, per doz	.15
String Beans	.2@3
Beets	.40
Green Onions, doz. bunches	.25@35
Carrots, doz. bunches	.25@35
Peas, per lb	.2@3
Turnips, doz bunches	.25@30
Celery, per doz	.45@60

Citrus Fruits

Lemons, Standard	1.25@1.50
Lemons, Choice	2.50@2.75
Lemons, Fancy	$3.00@3.50
Navels, Choice	$3.00
Navels, Fancy	3.25@3.50
Grapefruit	$3.50@4.00
Grapefruit, seeds	$2.50

Fresh Fruits.

Apples are very scarce and of indifferent quality.

Missouri Pippins	3.25@3.50
N. Y. Pippins	$2.50
Apricots, per 30-℔. box	$1.50@1.75
Strawberries	.4@5
Dewberries	.5
Bananas, per ℔	.5@5½
Cherries, B. Repub	.7@10
Cherries, B. Tar	.8@12
Cherries, White, Royal Anne	.7@8
Logan Berries	.6@8
Raspberries	.8@10

Dried Fruits

Evaporated Apples, ch to fy	.10
Apricots	.5@10
Peaches	.10½
Pears	.11½
Santa Clara Prunes	.4@8½
Smyrna Figs	.15@17

Beans, Dried.

Limas, No. 1	5.00
Pinks, fancy	2.40@2.60
Lady Washington	3.10@3.25
Small White	3.60@3.75
Black Eyes	6.50

Honey.

The honey prices here quoted are those of the Los Angeles Board of Trade, the most responsible authority we have. They are jobbers prices, that is, prices at which the jobber sells to grocers and others in small lots. The producer can take from this his freight to Los Angeles and one cent per pound for commission and will have left the net price to him.

Honey, extracted, water white, 60-℔ cans	.6
Honey, extracted, water white	.5½
Light amber	.5
Comb, white, 1-℔ frames	.14-15
Light amber	.12@12½
Beeswax	.25

Nuts.

Peanuts, Virginia	.6½
Peanuts, California	.5
Walnuts	.13½

Hay.

Barley, No. 1	$15.00@16.00
Barley, No. 2	$10@12.50
Alfalfa, local	$13.00@14.00
Plain Oat Hay, No. 1	$17.00
Plain Oat Hay, No. 2	$13.00

Grain.

Purchasing prices f. o. b., Los Angeles, are:

Wheat	1.25@1.37½
Barley	1.20@1.22½
Corn	1.22 @1.24
Rolled Barley	1.40
Bran	1.20
Feed Corn Meal	1.45
Shorts	1.45
Wheat, per cwt	1.50@1.65
Cracked Corn	1.45
Oil Cake Meal	2.50
Cocoanut Meal	1.50

San Francisco Markets.

San Francisco, June 5, 1906.

Dairy Produce.

The ruling prices of the San Francisco Wholesale Dairy Produce Exchange yesterday were as follows:

Butter.

BUTTER—Fresh California, extra, 18½c; firsts, 17½@18c; seconds, 16@16½c; packing stock, firsts, 15½@16c; seconds, 15c.

Cheese.

CHEESE—New California fancy, 9c; firsts, 8½c; Younm America, fancy, 10c; Eastern, new, 9c; Young America, fancy, 10c; Eastern, New York fancy, 16½@17c.

Eggs.

EGGS—Fresh California selected, 19c; firsts, 18@18½c; seconds, 17@17½c.

Poultry.

POULTRY—Old roosters, per doz., $3@4.50; young roosters, $4.50@6; fryers, $3.50@4.50; broilers, $2@3.50; hens, small, $4@4.50; large, $5@6; live turkeys, per lb, nominal; dressed turkeys, nominal; ducks, old, nominal; young, nominal; geese, per pair, nominal; goslings, nominal; pigeons, per doz., $1; young, $1.50.

GAME—Hare, $1.25 per doz; rabbits, nominal.

Fresh Fruits.

The leading fruits now in market sold yesterday at the following prices: Strawberries, per chest, $3@6 per large varieties and $7.50@10 for Longworths; apples, $1.50@2.25 per box; cherries, black varieties, 65@90c per drawer, white, 50@65c per drawer; cherries in bulk, black, 6@9c per lb; white, 5@8c; gooseberries, 40@70c per drawer; oranges, navels, $2.25@3 per box; lemons, $1.50@2.75 per box; Mexican limes, $3.50@5 per box; Bananas, 75c@$1.75 per bunch; pineapples, $2@3.50 per dozen; currants, 45@65c per drawer; loganberries, per chest, $4.50@7.50; cherry plums, per drawer, 60@75c.

Vegetables.

Dealers sold vegetables yesterday at the following prices: Asparagus, $1.50@2 for small and $2.50@3 for large box; green peas, 75c@$1 per sack; rhubarb, 65@85c per box for small and $1@1.25 for large; string beans, 2½@4c per lb; tomatoes, 75@1.25 per box; potatoes, new, 1@1¼c per lb; old Rivers, 75c@1.10 per sack; Oregon, 70c@$1; Coos Bay, $1@1.15 per sack; onions, new, 75c@$1 per sack; boxes, 25@50c Oregon, $2@2.50 per cental, as to quality; Australian, $3.50@4; cucumbers, $1@1.50 per box.

Live Stock Market.

CATTLE—No. 1 steers, 6½@7c; second quality, 6@6½c; third quality, 5½@6c; No. 1 cows and heifers, 5½@6c; second quality, 5@5½c; third quality, 4@5c; thin cows and heifers, 3@4c; bulls and stags, 2@3c. Prices for all descriptions less 50 per cent for shrinkage.

CALVES—Light, per lb., 4¼@4¾c, gross weight; medium, 3½@4c; heavy, 3@3½c.

SHEEP—Per lb: Wethers, No. 1, 4½@5c, gross weight; ewes, No. 1, 4@4½c; gross weight.

LAMBS—Per lb: Yearlings, 4½@5c.

HOGS—Per lb: Hard grain fed, weighing alive 80 to 130 lbs. 6c; 130 to 180 lbs, 6½c; 250 to 350 lbs. 6c; rough heavy, 4@5c; common 3½@4c.

Flour and Grain.

FLOUR—Net cash: Family Extra, $4.70@5.10 per barrel; Bakers' Extra, $4.40@4.75 per barrel; Oregon and Washington, $3.50@4.

WHEAT—No. 1 shipping, per cental, $1.30@1.32½; inferior grades, $1.25@1.27½; white milling, good to choice, $1.32½@1.37½, with fancy up to $1.40.

BARLEY—No. 1 feed, $1.10@1.12½; common to fair, $1@1.08¾; brewing, nominal.

OATS—White, $1.35@1.60; red, $1.50@1.60; black, $1.30@1.40.

RYE—$1.47½@1.55 per cental.

CORN—Small round yellow, $1.55@1.65; western, mixed, $1.32½; yellow, $1.30@1.37½; white, $1.35@1.40 per cental.

Hay and Feedstuffs.

Arrivals of hay on the San Francisco market during the past six days have amounted to 2699 tons. Conditions in the trade have not been isfactory. It has been impossib get supplies enough to furnish the demand. There is plenty of hay being loaded at railroad points, but the rail road does not bring the hay into San Francisco as shipped. During this week on one day there were only two cars came into San Francisco, on another day only three cars, and another day only five cars. This condition has caused terrible inconvenience to all parties concerned here. It is impossible to supply the demand with what they need of the different qualities. We had expected that the new hay would relieve the situation, but the recent heavy rains have damaged what was baled, and delayed further baling and shipping for the moment. Prices on hay have continued very largely nominal, as the question has not been price, but ability to get the hay of suitable quality to meet the requirements of the consuming trade. There has been some little inquiry lately for shipping hay, but some orders could not be filled for the reason that the hay was not at hand. The trade for alfalfa hay is very light.

Straw continues in moderate supply, with a demand about equal to the amount that is offered.

HAY—Per ton, choice wheat, $13@17.50; wheat and oat, $10.50@14.50; oat, $9@13.50; barley, nominal; alfalfa, $10@12; new first crop, $6@8; stock, $7@7.50.

STRAW—Per bale, 40@60c.

FEED—Mixed feed, per ton, $24@25; Calfalfa Meal, $23.50; carload lots, $22; Mealfalfa, per ton, $23.50; carload lots, $22.

BRAN—Per ton, $19@21.

MIDDLINGS—Per ton, $27@30.

GROUND BARLEY—Per ton, $24@26.

FEED CORN MEAL—Choice grades, per ton, $28@29.

CRACKED CORN—Choice stock, per ton, $29@30.

COCOANUT CAKE—In lots of 10 tons, $23; 5 tons, $23.50; less quantity, $24. Prices are mill rates and are subject to change without notice.

OILCAKE MEAL—Mill rates in 5-ton lots, $37.50; jobbing, $38@38.50.

Beans and Seeds.

BEANS—Prices per ctl.: Large white, $2.40@2.60; small do, $3.25@3.45; pea, nominal; Lima, $4.50@4.60; red, $3.75@4; pink, $1.75@1.90; Bayo, $3.75@4; blackeyes, $5.25@5.50; red kidneys, $3.50@3.75; horse beans, nominal.

SEEDS—Brown mustard, $4.50@4.75; yellow mustard, $3.50@3.75; Flaxseed, $2.50@3; canary, 6@6¼c; alfalfa, 12c; rape, 2½@3c; timothy, 5c; hemp, 5@5½c per lb.; millet, 3@3¼c.

DRIED PEAS—Niles, $1.85; green peas, $2.25@2.50 per ctl.

Hops.

Desirable grades of California crop of 1905 sell at 7@10c per lb; 1906 crop, for future delivery, 8@11c.

Hides and Wool.

Wet Salted Hides—No. 1 sound, per lb., heavy steers, over 50 lbs, 13c; medium steers, over 48 lbs., 12c; heavy cows, over 50 lbs., 12c; light hides, 12c; kips, 13c; veal, 13½c; calf, 14c; stags and bulls, 8½c; No. 2 hides, 1c per lb less.

Dry Hides—per lb: No. 1, 22c; No. 2, 18c; dry calf, No. 1, 24c; No. 2, 22c.

Horse Hides—Salted, large, $3@3.25 each; medium, $2.75 each; small, $2.25 each. Dry—Salted, $2@2.25 each; medium, $1.50@1.75 each.

Sheep Pelts—Long Wool Skins, $1.25@2 each; medium wool skins, 90c@$1.10 each; short wool skins, 50@75c each; shearings, 20@40c.

CITRUS MARKETS

New York, June 5.—Twenty nine cars sold yesterday in a brisk market, the demand being most unusually strong with the expectation of a continuance at least until the navels are all in. Seventeen cars were sold at auction today. The market is very strong and the weather favorable.

WASHINGTON NAVELS.

	Averages
Blue Globe, xfy, Riverside Evx.	$4.20
Sweetheart, fy, Riverside Ex.	3.85
Quail, xch, O.-C. Ex.	3.70
Our Pride, xfy, Riverside Ex.	3.60
Uncle Sam, xfy, Riverside Ex.	3.80
Fiesta, xch, Riverside Ex.	3.55
Square, fy, Riverside Ex.	3.40
Old Mission, C. C. Chapman	3.30
Golden Eagle, std, C. C. Chapman	3.30
Greyhound, ch, S. A. Ex.	3.30
Greyhound, ch, S. A. Ex.	3.25
Golden, std, Riverside Ex.	3.05

SEEDLINGS.

Ruth, fy, Rubidoux Fruit Co.	3.75
Violet, xch, D.-M. Ex.	3.65
Golden Eagle, std, C. C. Chapman	3.60
Slover Mountain	3.45
Alhambra, xch.	3.45
Our Pride, xfy, Riverside Ex.	3.35
Don Quixote, ch, S.-T. Ex.	3.20
Jasmine, ch, D.-M. Ex.	3.20
Alhambra, xch.	3.15
Eagle, xch, Riverside Ex.	3.00
Red Globe, xch, Riverside Ex.	2.85
El Toreador, std, S.M.G.P. Assn.	2.80
Titus Ranch	2.80

SWEETS.

Independent, Highland	4.45
Old Mission, C. C. Chapman	4.40
Independent, Highland	3.75
Fountain, ch, Moffat Bros.	3.30
Slover Mountain	3.15

VALENCIA LATES.

Fountain, ch, Moffat Bros.	3.80

THOMPSON'S IM'P. NAVELS

Orchard, o r, Nat. O. Co.	4.65
Standards	3.85

JAFFAS.

Blue Globe, xfy, Riverside Ex.	3.45

ST. MICHAELS (Whole boxes)

Fountain, ch, Moffat Bros.	3.50

ST. MICHAELS (Halves)

Slover Mountain	1.65

BLOODS (Halves)

Blue Globe, xfy, Riverside Ex.	1.90

GRAPEFRUIT.

Old Mission, C. C. Chapman	6.00
Mountain, fy.	3.00
Independent, Highland	2.55
Iris, xfy, D. M. Ex.	4.15
Violet, x, D.-M. Ex.	3.25

Cleveland Market.

Cleveland, June 5.—Four cars were sold at auction today. The market is strong.

WASHINGTON NAVELS.

	Averages
Royal Knight, xfy, R. H. Ex.	$3.90
Ben Hur, ch, R. H. Ex.	3.75
Newsboy, or, r.-H. Ex.	3.25
Square, or, fy, Riverside Ex.	4.20
Golden, std, Riverside Ex.	3.00

MEDITERRANEAN SWEETS.

Trolly	2.70
Purity, xch, Wilson & Gilman.	3.75
Country Home, ch, W. & G.	3.35
Ben Hur, ch R.-H. Ex.	3.90
Newsboy, or, R.-H. Ex.	3.10
Trolly	2.90

Boston Market.

Boston, June 4.—Seven cars of navels, one car sweets, one car lemons and five mixed cars were sold at auction today. The market is very strong. The weather is favorable.

WASHINGTON NAVELS.

	Averages
Rey, fy, S. T. Ex.	$4.70
Tunnel, xch, S. T. Ex.	4.50
Square, fy, Riverside Ex.	4.50
Quail, xch, O.-C. Ex.	4.45
Quail, xch, O. C. Ex.	4.30
Quail, fy, Riverside Ex.	4.10
Square, fy, Riverside Ex.	4.10
Fiesta, xch, Riverside Ex.	4.00
Pet, xch, S. A. Ex.	4.00
Greyhound, ch, S. A. Ex.	3.70
Volunteer, ch, S. A. Ex.	3.50
Greyhound, ch, S. A. Ex.	2.85

SWEETS

Rey, fy, S. T. Ex.	4.65
Whittier, fy, W. F. Whittier	4.65
Tunnel, ch, S. T. Ex.	4.35
Whittier, ch, W. F. Whittier	4.35
Yosemite, xch, C.C.U., Highland.	4.10
Stearns, std, C.C.U., Highland	4.00
Monogram, fy, C.C.U., Redlands	4.05

SEEDLINGS.

Yosemite, xch, C.C.U., Highland.	4.00
Tunnel, ch, S. T. Ex.	3.85
Stearns, std, C.C.U., Highland	3.60

BLOODS (Whole boxes.)

Golden Rule, xch, Riverside Ex.	4.00
Royal, xch, Q. C. Ex.	3.40

BLOODS (Halves)

Queen eBe, xfy, Q. C. Ex.	2.15
Quail, xch, O.-C. Ex.	2.10

ST. MICHAELS

Yosemite, xch, C.C.U., Highland	3.95

LEMONS.

Highland, fy, Independent F. Co.	5.15
Highland, ch, Independent F. Co.	4.65
Stock Label	4.00

GRAPEFRUIT.

Whittier, fy, W. F. Whittier	4.75
Highlander, xfy, C.C.U. Highland	3.15
Trophy, xfy, C.C.U., Highland	2.90
Yosemite, xch, C.C.U., Highland.	1.50

Foreign Lemon Sale.

Boston, June 4.—Condition good; 1000 Palermo lemons were sold today. Fancy 300s, $3.95@5.60; 359 boxes Maori lemons sold today; fancy 300s, $5.35@6.10.

FARMER'S VECETABLE CARDEN

Continued from first page.

passed through the fermenting stage before being used. The use of night soil generally is not to be recommended, as its aplication, unless properly treated for the destruction of disease germs may prove dangerous to health.

For garden crops there is no fertilizer that will compare with good, well rotted barnyard manure. In localities where a supply of such manure can not be secured it will be necessary to depend upon commercial fertilizers, but the results are rarely so satisfactory. In selecting manure for the garden, care should be taken that it does not contain any element that will be injurious to the soil. An excess of sawdust or shavings used as bedding will have a tendency to produce sourness of the soil. Chicken, pigeon, and sheep manures rank high as fertilizers, their value being somewhat greater than ordinary barnyard manures, and almost as great as some of the lower grades of commercial fertilizers. The manure from fowls is especially adapted for dropping in the hills or rows of plants.

Commercial fertilizers are sold under a guaranteed analysis, and generally at a price consistent with their fertilizing value. No definite rule can be given for the kind or quantity of fertilizer to be applied, as this varies with the crop and the land. At first the only safe procedure is to use a good high-grade fertilizer at the rate of from 1000 to 2000 pounds to the acre and note the results. Market gardeners frequently apply as much as 2500 pounds of high-grade fertilizer per acre each year.

If you want an apple orchard and chicken ranch in the far famed Pajaro Valley, the largest and best apple growing section west of the Missouri river, read the advertisement of the Pajaro Valley Implement Co. in this paper. Watsonville is a thriving and beautiful city and the country around it cannot be surpassed for beauty and fertility.

Fortunately escaping the disastrous fire that swept so many San Francisco firms out of business the Pacific Implement Co. are at their old quarters, 133-153 Kansas St., amply equipped for business in all lines. Their advertisement appears in this issue.

H. M. Warren, of Santa Cruz, advertises Indian Runner ducks from his famous stock in the Cultivator this week. Mr. Warren is one of the old reliable fanciers of the state.

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Consignments Solicited

Sole Agent for Little Gem Berry Baskets

Stalls 149-150-204-205 Los Angeles Market, Los Angeles, Cal.

CERTIFICATE OF PARTNERSHIP.

State of California, County of Los Angeles, ss.

We, the undersigned, J. J. Steadman, H. A. Perkins and Frank Honeywell, do hereby certify that we are the persons transacting business in the State of California, at the City of Los Angeles, County of Los Angeles, under the firm name and style of the Cultivator Publishing Company; that the names in full of all the members of such copartnership are J. J. Steadman, H. A. Perkins and Frank Honeywell, and that the places of our respective residences are set opposite our respective names hereto subscribed.

Names.	Residences.
J. J. STEADMAN,	Hollywood, California.
H. A. PERKINS,	South Pasadena, California.
FRANK HONEYWELL,	1702 Hoover street, Los Angeles, California.

State of California, County of Los Angeles, ss:

On this 12th day of May, 1906, before me, H. E. Storrs, a notary public within and for said county and State, residing therein, duly commissioned and sworn, appeared J. J. Steadman and Frank Honeywell, known to me to be the persons described in and whose names are subscribed to the foregoing instrument, and each of them acknowledged to me that he executed the same.

In witness whereof I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

(Seal) H. E. STORRS,
Notary Public in and for said County of Los Angeles, State of California.

State of California, County of Los Angeles, ss:

On this 14th day of May, in the year of our Lord one thousand nine hundred and six, before me, H. E. Storrs, a Notary Public in and for said County of Los Angeles, State of California, residing therein, duly commissioned and sworn, personally appeared H. A. Perkins, known to me to be the person whose name is subscribed to the within and annexed instrument, and acknowledged to me that he executed the same.

In witness whereof I have hereunto set my hand and affixed my official seal in said county, the day and year in this certificate first above written.

(Seal) H. E. STORRS,
Notary Public in and for Los Angeles County, State of California.

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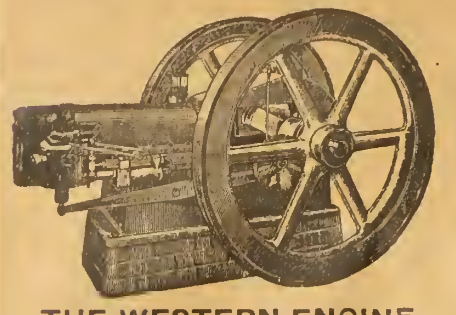

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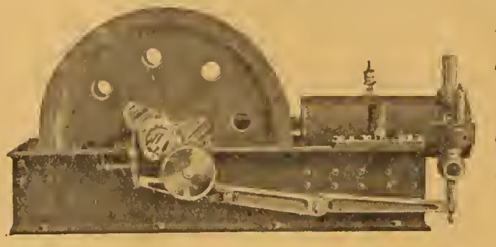

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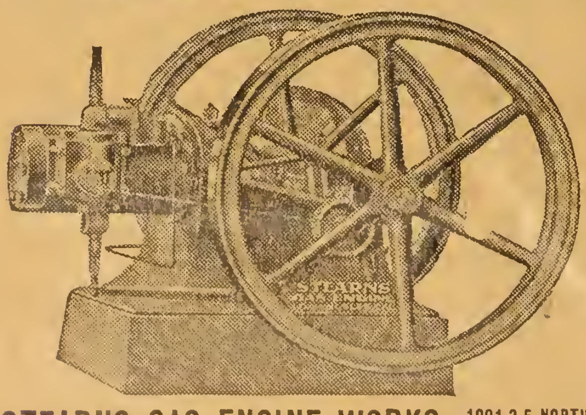

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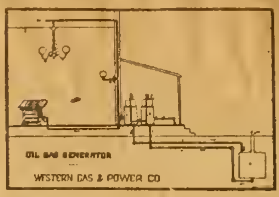

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GIANT *Distillate, Gas, Oil and Gasoline* ENGINES

Are the most economical in first cost, fuel consumption and repair bills. Complete equipments for irrigation or drainage. Write us your wants in this line and let us give you an estimate, or call at our works and see the engines in operation.

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The Haynes *Gasoline Engine*

Simplicity is its feature. You do not need to be an experienced engineer to operate the Haynes. My prices are the lowest for a first-class engine. Guaranteed.

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Three Carloads of
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Samson Gasoline and Distillate Engines

Are Strong and Durable

Fully guaranteed in every particular.

We make complete Irrigation Outfits.

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Are the best. The enlargement of our factory makes it possible for us to make prompt delivery.

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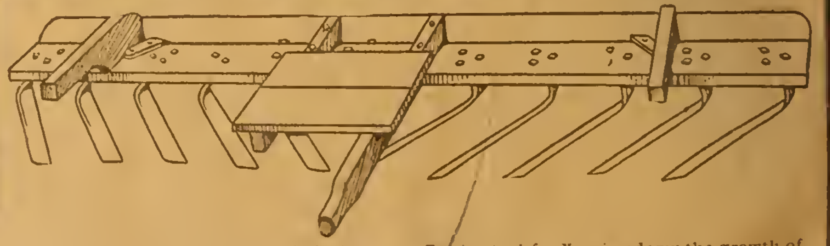
THE

Killefer Clean Cut Weeder



Is just what the name implies. It is the most effective tool for keeping down the growth of weeds after rains or irrigating on orchard, beet, bean or grain land. It does twice the work of any other tool with the same power. The knives overlap so it is impossible to miss any weed. Built in 6, 8, 10 and 12 foot sizes. The patented knives are so formed that they wear uniformly from heel to point, causing them to wear twice as long as any other blade for the same purpose. It is ***the*** tool for weed killing on any kind of cultivated land. Blades can be attached to cut in or out as desired.

The Killefer-Griffith Mfg. Co., 1336 Palmetto Street, Los Angeles, Cal.

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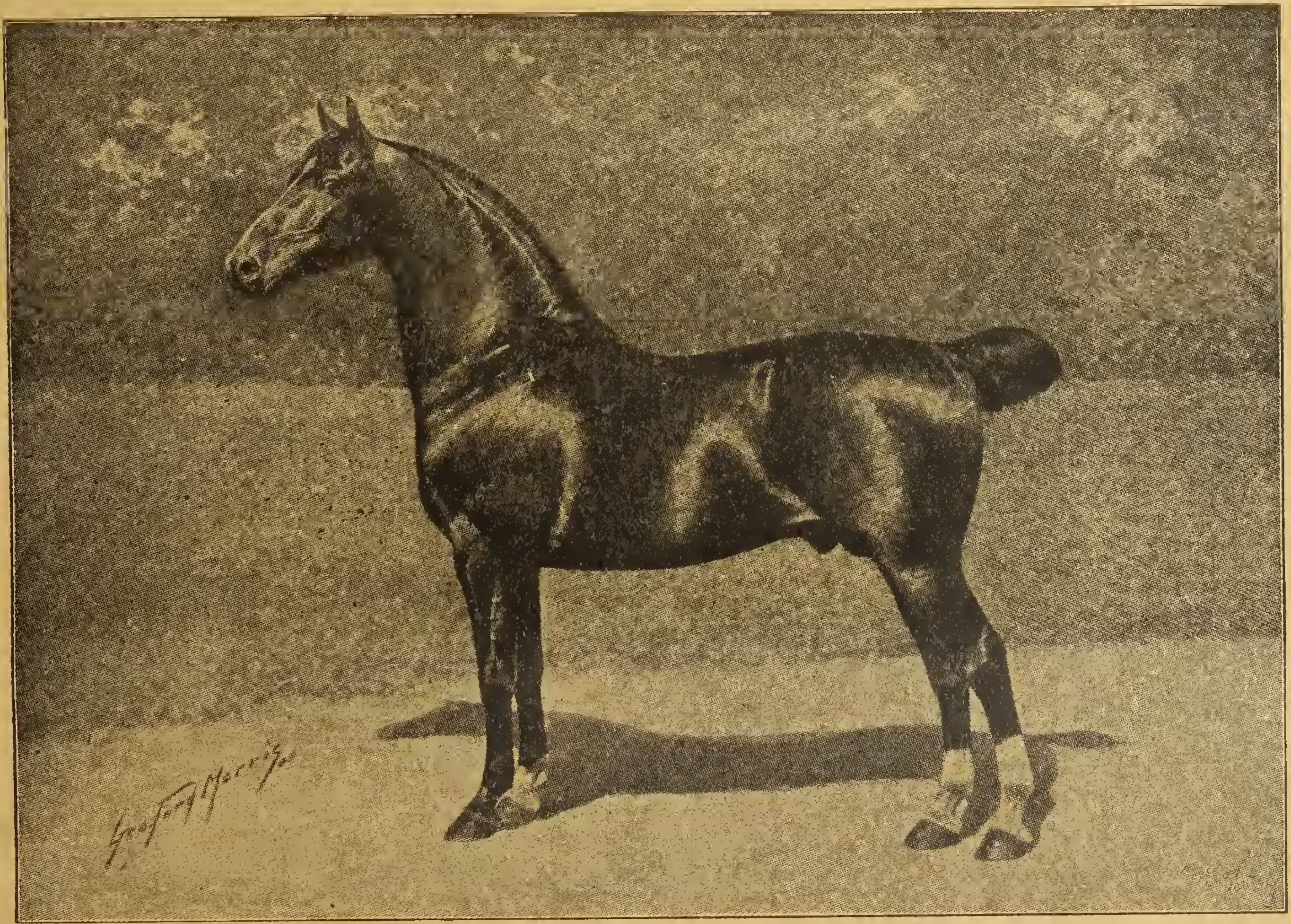


CHAMPION FRENCH COACH STALLION PALADIN 1968.

At the head of the famous Oaklawn Farm Stud of French Coach Horses of Dunham, Fletcher & Coleman, Wayne, Du Page County, Illinois.

The Coach or Carriage Horse.—The distinguishing features of the coach or carriage horse are its symmetry and action. The height should be about 16 hands to make a good appearance. In contrast with the roadster the carriage horse is very smooth and symmetrical. The smoothness should be due to plumpness of the muscle over all parts. In the carriage type the head should be comparatively small and lean, the ear neat, the neck long and carried gracefully, the body round and plump and the limbs clean cut, with well formed and durable feet. Graceful carriage and action are leading qualifications.

ANOTHER GAS ENGINE TO THE FRONT.

Ex-Senator Dorsey has recently installed a pumping plant on his ranch near Pasadena, consisting of a 40 H. P. Stover gas engine and Addison pump.

The Stover engine was introduced into this field about a year ago and has made such rapid strides within that time that the Southern California agents, Livingston and Lee, have put up a splendid sample room in connection with the shops of the Commercial Engine Company, 953 North Main street, Los Angeles, and are well equipped to figure on anything from 2 to 40 horsepower.

Mrs. A. M. Cary has a 25 horsepower running and a No. 6 Byron Jackson pump near Rivera and altogether the opening of a tardy pumping season looks very bright.

The Stover engine has less working parts than any engine on the market and has combined some of the good features of old lived engines with modern and up-to-date improvements, so that after a person has seen one running they cannot help but conclude that the troubles of the gasolene engineer are about over.

The new speed regulating attachment recently introduced on these engines is worthy of more than passing notice, as it puts the speed of the engine under almost as perfect control as can be obtained on a well regulated steam engine. This point of course is commendable on drilling rigs, wood sawing outfits, and, in fact, in any place where change of speed is necessary. By simply touching a light lever the speed can be moved up or down, notch by notch, and yet the whole apparatus is so simple we wonder it was not thought of before.

On the whole the Stover engine bids fair to become a keen competitor in the race for a portion, at least, of the trade of this splendid market, and anyone interested directly or indirectly in gas engines will find a half hour spent in the salesroom of Livingston and Lee, 953 N. Main st., well worth while.

SELECT YOUR LAYING HENS.

It is desirable that the hens lay large eggs, and while some breeds lay larger eggs than the average, yet there are individual hens of all breeds that excel in that respect if the conditions are favorable. What is meant by large eggs is not such as may be of abnormal size, or approaching those which contain double yolks, as only the hens that are overfat lay double-yolk eggs, but eggs of an average size and uniform in appearance. When the eggs are uniform they present a more attractive appearance in market, and bring better prices. When pullets are just beginning to lay it is more usual for the eggs to be small than of an average size, and the same thing happens to both hens and pullets when they are near the end of their laying period, especially when about to molt. The feed has also something to do with the matter, as it has been noticed that hens which are well fed and receive a liberal allowance of corn lay larger eggs than those which receive a less quantity of grain, but there is no uniformity in the size of eggs from a whole flock, as the hens differ. Even two sisters may lay entirely unlike in every respect.

At the New Jersey Agricultural Station, in 1904, dried beet pulp was compared with dried molasses beet pulp as regards influence on yield of butter and milk, etc. The test was made with four cows and lasted 30 days and indicated that the addition of molasses to beet pulp is no advantage in feeding for the production of milk.

Fifty Cent Pieces Running Around on Legs

And How They May be Made to Earn Five Dollars Profit

The ordinary laying hen sold in the market would bring about 50c; therefore a flock of common hens might be known as 50 cent pieces running around on legs.

But, you take these hens and feed them once a day a meal of **COULSON'S IMPROVED MASH EGG FOOD**, and these hens will coin money for you every day.

According to San Francisco market prices for eggs, a good hen (fed on Coulson's Mash Egg Food every day) will lay enough eggs in a year to value somewhere between $3.00 and $4.00. Feed the hens for 2 years on **Coulson's Improved Mash Egg Food**, and during this time they will lay enough eggs to earn $5.00 per hen profit, more than the cost of the feed. Then you can send the hens to market and get the original value of 50c back again for her.

So when you can make $5.00 gold pieces out of 50 cent pieces, by feeding the hens **COULSON'S MASH EGG FOOD**, you can't make money any easier.

A word to the wise is sufficient. It is to your best interest. Go to your store-keeper and order a few bags of Coulson's Improved Mash Egg Food.

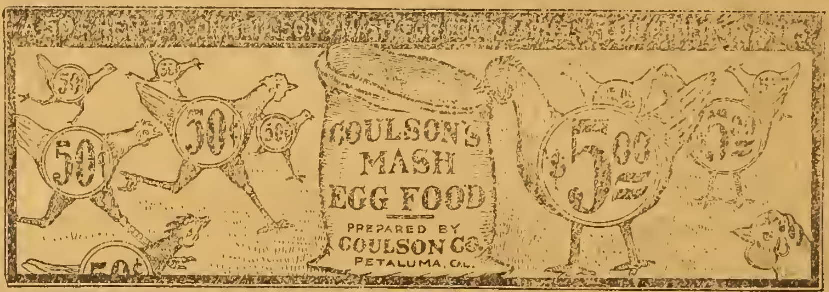
RAISING CHICKENS?

I Certainly Would Feed Them Coulson's Mixed Poultry Foods. Why?

Johnny Bull Tells Why He Would Use Coulson's Poultry Feeds.

1st. I know how nice Mr. ——— hens looked when I saw them; what nice red combs they had, and what nice healthy birds his hens were. I know that Mr. ——— was getting two cases of eggs a week in the Fall of the year from 350 hens, when other people's hens were not laying at all, and when eggs were bringing him 51c per dozen; and he has been feeding Coulson's Feeds for over a year, which show how good the feed is, for his hens netted him a profit of $2.00 apiece last year. Most people only make $1.00 per hen per year.

2nd. I know that there are other large poultry ranchers near Petaluma who feed Coulson's Feeds. For instance, Mr. Geo. Gaston has FED THE FEED FOR THREE YEARS every day to 3000 hens. Then there is Mr. W. W. Freeman, who has fed Coulson's Poultry Foods for about three years to 4000 hens; and Mr. De Rezendes at Tomales, has fed several thousand bags of it and buys it in car lots. All these are successful poultrymen, and if the feed was not good they would not continue to use it so long, and their being successful poultrymen, they know that Coulson's Egg Food GIVES THEM MORE returns than any other feed for the money.



3rd. Then there is Mr. Henry Graff, former President of the Pacific Coast Poultry Association, and a very successful poultryman, who makes his flock of 2000 hens average 184 eggs per hen per year, which is nearly $4.00 per hen, according to the market price for eggs in San Francisco last year. I know that if these successful poultrymen use Coulson's Foods, then I should use them too.

Hens Need a Good Balanced Ration

4th. Then I know that hens need a Balanced Ration, and that they need Meat Meal, Blood Meal, Bone Meal, and such things, and they get all these in Coulson's Foods. I know that if I were to go to a store to buy these Meat Meals, Blood Meals, Bone Meals, etc., that I would not be able to get anything good, for it would all be fertilizer stock, which would not be very good to feed to the hens, as it would not agree with them, and therefore prevent them from giving good results. In any case the stores from which I could buy these articles, would charge me a high price for them, as they only handle them in small quantities, while the Coulson Co. get these supplies (Meat Meal, Blood Meal, Bone Meal, etc.) by the carload, and therefore, can afford to sell cheaper, and I will get them ALREADY MIXED with the feed.

Healthy Hens are Profitable Hens

5th. I know it PAYS TO KEEP THE HENS HEALTHY, and that the hens need Flaxseed Meal, Condition Powders, Charcoal, etc., and that they get all these in Coulson's Feeds. I want my hens to be healthy, and not sickly, like other people's, which I have seen, where they were fed only cheap feed, and I know that if I feed them Coulson's MASH EGG FOOD, they will get all they require to keep them healthy, and they WILL DO SO WELL on it.

6th. What is the use in spending so much time every morning, mixing up a little chicken feed, when I can get it already mixed by machinery, and when it contains everything that is needed? All I have to do is to take the feed out of the sacks and mix it with a little water, and it is ready for the fowls; whereas, when I mix it by hand, it would take at least two hours every morning, and then it would not be mixed as well as when it is mixed by machinery.

Cost Is Not Much--Two Pounds Feeds a Hen a Month

7th. Coulson's Mash Egg Food doesn't cost much, a 90-pound sack will make a meal for 1250 hens. A little more than two pounds will feed a hen for a month, and if a hen lays three eggs a month, it pays for the feed; and I know of some hens that were fed on Coulson's Feed, that laid 23 and 24 eggs a month.

Profit In It for the Feeder

8th. It's results that I'm after. So long as I am keeping hens, I am going to make as much profit out of them as I can. I know a poultryman at Elmira, with a small flock of 400 laying hens, which he fed every day on Coulson's Mash Egg Food, and he sold over $1100.00 worth of eggs from them in one year, making nearly $700 clear profit from 400 hens, fed on Coulson's Feed. You bet, it pays to feed the laying hens, COULSON'S IMPROVED MASH EGG FOOD.

What the Little Chicks Would Be Fed On

9th. I would feed the baby chicks on Coulson's Special Dry Chick Feed every time, especially until they get to be 6 or 7 weeks old, anyway. I would scatter cut chaff on the brooder house floor, and would spread the Coulson's Special Dry Chick Feed around in this. This would give the chicks splendid exercise and keep them busy and contented; and in this feed they would get all that they required to build up their bodies, and what a delight it is to see them grow—why, every day you can see them getting bigger. A 100-pound sack of Coulson's Special Dry Chick Feed will feed 300 little chicks for the first three weeks or longer, so the cost would only be about 1 CENT PER CHICK for the feed for the first three weeks.

10th. I know one poultryman that raised 800 chicks up to two months on Coulson's Special Dry Chick Food, at a cost of 4½ c per chick, for the feed, and he only lost 29 chicks out of the 800 when I saw them, and such fine looking fellows too.

After the chicks got to be 6 weeks old, I would give them one meal a day of Coulson's Growing Chick Feed, and after they got to be two months old, I would give them two meals a day of the Growing Chick Food, and one meal of the whole wheat or cracked wheat. At about 11 weeks of age, I would send the roosters to market, and commence feeding the pullets on Coulson's Balanced Ration Mash Egg Food once a day, and whole wheat two meals a day. And I venture to say that I would soon have a flock of birds that would average me over $2.00 per hen per year profit—by feeding them Coulson's Mixed Poultry Feeds or Balanced Rations.

Ask your dealer about Coulson's mixed poultry feeds manufactured by

4 CENTS A MONTH
to feed a hen Coulson's IMPROVED Mash Egg Food Every Day. Two eggs a month pays for the feed and when you get 18 to 20 eggs a month think of the money the hen earns for you.

COULSON POULTRY & STOCK FOOD CO., PETALUMA, CALIFORNIA

CALIFORNIA CULTIVATOR

Vol. XXVI—No. 24 LOS ANGELES, CAL., THURSDAY, JUNE 14, 1906 Subscription $1.00 a Year

The Rural Home and the Rural School

Some philosopher has said that the best crop raised on the farm is the children. We all believe it. Persons reared in rural districts have occupied very important places in the professions and business life of the country. Or if they remain on the farm, their hope for success is much greater if they are well educated. Yet we oftener see fine barns than fine schoolhouses in the country districts.

We sometimes act as if the country school belongs to the teacher. If every person felt that the school belongs in part to him, he would be likely to see that the school gives better returns; and this would lead to giving some attention to the school property even if he cared nothing for the instruction given in the school. How many farmers or farm women really know how their schoolhouse looks on the inside? How many would recognize a photograph of the inside? If the teacher punishes your child you rebel and perhaps report the occurrence to the trustee; but the child may be unhappy every day and all because of the wretched condition of the schoolhouse and the outhouses. Calculate how many hours your child spends each year at the school: what impressions are influencing its life all this time?

* * *

Teachers underpaid.—Following is the substance of a letter written by the trustee of a certain school district to the commissioner:

"We want a teacher for our district school. Most anybody will do, for the children are all small and there are not many of them. Will you give a temporary license to Miss ———. She failed in her examination for a certificate, but she lives in the district, and we can get her cheaper than some one from a distance who has a certificate."

One woman heard about the letter, and told her neighbor. They protested. They had pride in the neighborhood and the school. Other neighbors were consulted. The little school house had sent out some boys and girls who had amounted to a great deal in the world, and they believed its usefulness as a factor in education was as promisiing as ever. Thereupon a movement was started for better pay for the teacher. in order that better teachers might be secured.

* * *

The office of trustee.—The farmer who had been elected in a certain district declared that he did not want the office. He said it took too much time, and there was no pay in it. Besides, he could not please every one. But they elected him, and at the same time voted enough money to run the school upon as economical a basis as possible. The district had a small valuation, and this year farmers did not have a large amount of money with which to pay school taxes. The trustee was instructed to hire a teacher who could pass an examination, and to get her as cheaply as possible. The whole tendency was to run the school so cheaply that it had no tone. The enterprise seemed to be hardly worth the while for the busy man.

* * *

The rural school teacher.—She has to hear more classes and cover more work than one who has but two grades. She must be prepared to teach all parts of the arithmetic every day, when perhaps a grade teacher in the village school teaches only decimals and fractions the year around. Then the rural teacher does not have a principal to aid her in disipline, nor much of any library and apparatus to assist in her work as teachers have in the union schools. Here is the experience of one teacher: She had hoped she might teach in a union school, where the wages were better. but she found that her expenses would be nearly double, and she decided to use her very best energies toward making a model country school. Some of her friends offered sympathy because she would not have much company nor hear concerts and lectures. But she went bravely to the district on Saturday before school opened, and as she drove over the country road she felt a sympathy for her frends in town, because they could not live as near nature as she could live. The country has its recompense.

A Model Country House.

* * *

To mothers and teachers.—One Saturday early in a term the women in one district were all invited to the school building. Some of these neighbors, though living far apart, had not met for weeks, and it was a treat to them to be invited by the teacher. She made tea upon the schoolhouse stove. Nothing was said about improvements or the necessity of them until, as the wind blew, they had to move away from the lose-fitting sashes and broken window lights. The sun shown in through the uncurtained windows into the faces of the guests. The seats soon became very uncomfortable. These mothers discussed the possibilities for making more homelike surroundings. They suggested a plan, which was approved by their sisters, and the next Saturday found these same mothers at the school again. It was not tea simmering on the stove this time, but hot water in large quantities. Soap was there and scrubbing utensils. The application to the floor, to the ceiling, to the walls, to the windows, of soap, water and muscular effort wrought a complete change. They even scrubbed the tops of scarified desks which had seldom seen soap and water. Sleeves of all conditions had passed over the surface of the desks term after term, and soap and water removed the abiding place of dangerous germs. Then came the paste pot. The old paper had been torn from the walls. They had prevailed upon the trustee to buy some inexpensive paper and these women papered the school room. Then they blackened the stove. It shone as it never had since it was new. A schoolhouse stove really needs blackening occasionally, For curtains they had secured a roll of heavy brown manila paper and cut it to fit the windows. Sticks were pasted on it at the top and bottom, and the new curtains hung with a cord attached to fasten them at the required height. Cloth shades and roller attachments can be secured at the store for twenty-five cents each. These present a better appearance than the ones described. but cost more.

* * *

Better sanitary conditions.—They curtained off a corner of the room where a bench was placed, holding a basin and soap. The women agreed among themselves to keep the school supplied with towels. The water pail was provided with a cover to keep out the dust, because the danger of disease from school dust is great. The cup had been used by all the pupils. and now it is agreed that each child shall have in his desk his own individual cup. A basin was provided into which to empty the water remaining in the cup after each child drank.

* * *

Pictures and flowers.—Some inexpensive but artistic pictures, copies of masterpieces, and mounted by the teacher, were placed upon the walls; and who can estimate the artistic and educational value in a child's life of good pictures The pupils brought flowers, the lilacs, myrtle, apple blossoms and pansies, all packed together and tied with a string. Instead of packing them still tighter into disused ink bottles, our teacher separated them. letting the lilacs fall into graceful lines as they grew on the trees. In a small flat dish she arranged the dandelions, and in taller, plain, inexpensive vases she arranged the slender stems of taller flowers. The schoolroom was made into a veritable flower garden some days, and the girls were unconsciously learning lessons which would make them more artistic housekeepers.

* * *

Home and school united.—How proud these children were when the teacher went home with them! They told the other children about it the next day, and were proud little entertainers. They learned from her a great deal more about living than they ever could in the formal work of the schoolroom. She entered into the spirit of the home and every woman felt comfortable and happy with her there because she was a partner in the care of the best they had—their children—and because she was interested in their household duties. She found the farmers' wives as bright and intelligent a class of women as she had ever met, but they were busy from morning till night. She believed they would accomplish just as much and be in better condition to do for others if they had more recreation. The teacher and mother tried to keep up their Saturday afternoon meetings. One read aloud while others mended or sewed. They discussed with the teacher various subjects which would benefit the children. They talked over household problems and some of them added to the pleasure of the others by "brushing up" their music which, in their busy lives, they were fast forgetting.

* * *

Men become interested.—One even-

Continued on Page 570

Deciduous Fruit Culture

BY J. W. MILLS, POMONA, CAL.

THE MILLENNIAL GRAPE.

There has been considerable interest created in the Millennial grape during the last year or two. It has been taken up by experimenters on the desert with the hope that it may prove an early grape suitable for shipping. The originator, Mr. John Mathiasz in Hungary, claims that it has about all the good qualities that can be desired in a grape. Great vigor, strength and productiveness of vine, exceptional beauty, fine flavor, and excellent keeping and shipping qualities of the fruit. The claims have been borne out to a large degree by Mr. George Husmann of Napa. This grape has apparently been well tested as it has been grown in Europe since 1887 and in California since 1889. We saw a vine growing at Brawley, that was not so far advanced as Malaga. Luglienga growing beside it had grapes just ripening, would apparently be ripe the first week in June.

* * *

PRUNES.

The prune crop of Santa Clara valley is estimated to be 110,000,000 lbs. for the coming season. This is 5,000,000 pounds more than the combined crops of 1904 and 1905. During the season of 1900, California produced 130,000,000 pounds and France exported about 100,000,000 pounds. The figures on the estimate of the coming crop would indicate that there is no danger of an over surplus that would keep prices down. The prunes that Washington and Oregon turn out will not materially affect the California crop. Eighty per cent. of their prunes are Fellenberg, Italian prunes and do not come directly into competition with our French prune. They are falling into disfavor with the Washington and Oregon growers on account of shyness of bearing, tough skin, large pit and some other minor objections. The prune orchards of Washington, Oregon and Idaho amount to about 50,000 acres which produce about 12,000,000, pounds of prunes.

The prune industry in the northwest began in Oregon in 1860. The area of finer varieties will in all likelihood not increase very rapidly over the total now grown as the greater part of it will no doubt be changed gradually. The glut that was on the market during the last few years will act as a check on planting for years to come.

The history of prune growing in western Europe is interesting. Prune growing there dates back about one thousand years. It would seem that all that is desirable in varieties and methods might be found there, but there has been practically no change in that region during the last four hundred years. The great majority of prunes grown in France are grown in small lots mixed with all kinds of friuts and shrubs. The entire acreage of prune growing in western Europe embraces about two thousand square miles.

The French prune in its present state is not so popular as it used to be and an effort is being made to put it on the market in a pitted state. This is not practical at this time but if the product shows signs of becoming popular there will be machines invented which will make the product a commercial possibility. The pits are not only a useless part of the prune as a food but are an undesirable adjunct while they are the most expensive part to raise, drawing more fertilizer material from the soil than the entire flesh of the prune does.

A large quantity of the inferior grades of prunes are worked up into jams, butters. jellies and marmalades with other fruits, the prunes being used as a foundation. The culls and poorest grades are made into brandy which sells at a much higher price than other brandies. We have not introduced these branches of the industry into California prune growing to any great extent. There seem to be great possibilities in the jam, etc., line and if we get free alcohol for industrial purposes, there will be another outlet for the culls and lower grades.

* * *

CODLING MOTHS.

The codling moth, like the poor, is always with us. We expect some time to run him out with some sort of a bug, and we now have under way in the northern part of the state, some experiments with an imported insect that promises to practically exterminate this subtle pest of the apple grower. Should the State Board of Horticulture be as successful in this as it was with the Vedalia, it will pay for itself over and over again more than it has cost the state, as it did in introducing the Vedalia cardinalis. In the meantime we must continue to administer homeopathic doses of arsenic in our own behalf.

Paris green is the most popular remedy to use against the codling moth and it requires a pure article to do the work well. This is not always put on the market and orchardists should take particular pains to obtain only that which is pure. A good test is to place some on a smooth piece of glass, holding it at an angle and tapping it so that the powder will work slowly to the lower edge. If a white powder is left on the glass, it indicates that it is adulterated to that extent. Another test is to place a tablespoonful in a half pint of ammonia. If there is a sediment left after stirring it for a few minutes, it shows that it is adulterated.

White arsenic is much cheaper than Paris green and just as effective. It is more dangerous to use, owing to its similarity in appearance to baking powder or flour for which it may easily be mistaken.

"It may be prepared in the following manner: In two gallons of water, place two pounds of freshly slacked lime and one pound of arsenic. Boil from one-half to three-quarters of an hour. By this time the arsenic will have dissolved and united with the lime. When wanted for spraying, dilute with water and lime. The above arsenic will suffice for four hundred gallons of water. In order to prevent burning the foliage, slack one pound of lime to every twenty gallons of water used in diluting. This is for apple and pear trees."—Michigan Bulletin.

Paris green is used one pound to 200 gallons of water. If a couple of quarts of paste are used to a barrel of spray, the Paris green will be held in suspension a much longer time than otherwise and will not require constant stirring as is the case when using Paris green alone. By adding one quart of strong ammonia ot each pound of Paris green before putting it in the water, it will be dissolved and will remain a perfect mixture without settling. This, however, renders the Paris green soluble in water and will be washed off by rains. The undissolved article with the paste added will stick through considerable rain.

The codling moth lays its eggs on all parts of the foliage and fruit of the apple and pear trees and seems to bear the reputation of preferring the blossom end and a thorough wetting of every part of the foliage and fruit is the only way to combat the pest with sprays. It will require a spray pump with enough force to make a fine mist. This cannot be done with a cheap pump. The best results are obtained when the spray is left on the tree and fruit in the form of dew and not in such quantities as to run off of the foliage. More material will remain on the tree in the form of dew than any other form.

The first spraying should be done before the calyx closes, as after it will keep the spray from entering. A nozzle with a right angle is necessary to do good work as the spray must be sent down from above with force and should not be allowed to drop as mist.

THE ELBERTA PEACH.

It was down in that wonderful fruit section of Georgia where this great peach originated, in Houston county, just three miles east of Marshallville, on the farm of Hon. Samuel Rumph. This tree came up as a "black sheep" from the seed of the old Chinese cling. This, we all know, was a very large, white, clingstone peach, and the Elberta came, a very large, yellow, free stone peach. Its growth is very thrifty and rather stocky; it is hardy and stands spring frost well; the blossoms are evenly distributed over the tree and are closed bell shape. You can readily distinguish it while small from the other varieties as it is larger and has an ablong shape. This peach was named after the wife of Hon. Samuel Rumph.

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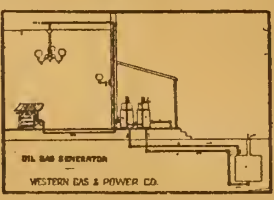

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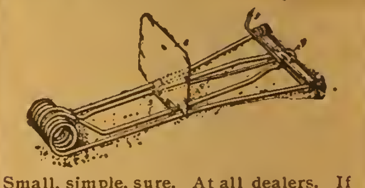

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Practical Farm Science

BY PROF. A. J. COOK

SUGAR BEETS.

Today I have spent much of my time in the beet fields in this famous old German town of Magdeburg, famous, for here Luther preached, and it was my pleasure to look into his old church. This city, about the size of Milwaukee, is about two hours by car southwest of Berlin. This is the great center of beet culture and sugar production for Germany and is no less famous for its work of beet-seed breeding and production.

For over half a century there has been an effort carried on in the manner that the Germans do all such work—with marvelous thoroughness. The aim from the first has been to develop beet seed that shall increase not only the tonnage of beets but also the percent of sugar. They have done what the Illinois farmers have done in breeding corn. That success has crowned their efforts is shown in the fact that when the work commenced the sugar content was only thirteen per cent. It has steadily increased till it reached sixteen, seventeen and in 1905, eighteen per cent. The principle of selection is on form of beet—that with long tap root is regarded as best—and the actual percentage of sugar, as shown by actual test made by polariscope. That we in America are interested, is shown from the following figures, which I have from our United States consul at Magdeburg, Hon. Frank S. Hannah, to whom I am greatly indebted for generous aid and kindly courtesy: Germany exported from this consular district of Saxony in the last fiscal year, from July 1, 1904 to July 1, 1905, beet seed to the value of $310,295.80 and in the calendar year of 1905 to the value of $492,511.50. These figures are indeed startling and exceedingly suggestive. Why may we not keep all this money in our own national pocket book? Although distinguished scientific experts in this field of research express to me the opinion that our climate will not permit successful seed production, I must confess I am exceedingly skeptical. We know that California produces beets with a very high percentage of sugar. I shall cherish the belief until actual test shows to the contrary, that we have equally superior facilities and conditions to develop superior seed. I hope and expect to see the day when California will not only produce its own beet seed, but will reciprocate and supply our German brothers.

I have today had a very interesting interview with the man who is the head of the largest beet farm in Germany, that of Kleins-Wansleben, Herr Schraube. This gentleman is conversant with all the details of field work and from him I gleaned very important facts which emphasize what I have before given to the readers of the Cultivator.

It will surprise many to learn that here they plant in rows only twelve inches apart, and when they thin leave the beets at an equal distance in the rows. They claim that this close planting not only gives more beets, but also increases the percentage of sugar. It is to be said, however, that there are very few vacancies in the rows. As Mr. Schraube remarked, they can afford no breaks. Last year was a phenomenal and an exceptional one, with just the right amount of water and cool favorable nights. They harvested, I am told, twenty tons to the acre with a sugar percentage of eighteen. They plant from the middle of April to the middle of May. The present season has been peculiarly balmy and I found that nearly all the beets were planted. They find it so much better to plow for beets in the fall that this has become the almost universal practice. They also plow very deep, usually about twelve inches. The soil however, in this region is very light, and it is possible that this matter of depth would need to be modified in case of heavier soils. They grow beets only one year in four, though some of the farmers put in a beet crop every third year. They plant in the intervening years either potatoes, grass or one of the cereals. While they use no stable fertilizer on the beet ground, they do use it liberally the other years with the grain crops. They do, however, use, invariably, commercial fertilizers, and find that it pays excedingly well to do so. They use fifty or more pounds of soda nitrate per acre and double this amount of lime phosphate in form of treated bone meal. Others use much more of this commercial fertilizer. They plant on this large beet farm twenty-five pounds of seed to the acre. Many beet growers plant more but they see no advantage in so doing. All the cultivating after planting is done by hand, and no weeds are permitted to grow. At first this culture is shallow but as the season advances they hoe deeper even to a depth of six inches. As before stated the beets are thinned to one foot and almost no vacancies are ever seen. This persistent and thorough cultivation they hold to be a sine qua non to the best success. As hand labor here is so very cheap it pays to use human in lieu of horse labor, Indeed, in such close planting it would seem impossible to use horse labor, though a trial might prove it otherwise. Most of this labor is done by women. I was told that they grow about twenty-five thousand beets to the "morgen," or two and one half acres.

* * *

VALUABLE OBJECT LESSON.

Berlin, always beautiful, is now superbly attractive owing to the grand avenues of trees distributed liberally throughout the city. This in addition to the grand and numerous parks makes one glad to be a resident of this beautiful city. Not only are there many trees, but there is only one kind along each street. This surely gives a most pleasing effect. Again, many of these trees are famous for honey. For example, there are many streets with the honey locust, which, I am told, ranks first among the European trees for honey. Others, with European linden and still others with maple. No wonder that bees do well even in the cities of Germany. They have ample forage of the best kind. I remember once hearing Mr. Braunton at one of our institutes recommending the bright red flowering Eucalyptus ficifolia as a street tree. I wondered then if this would not be too gaudy. I find now on more than one street in Berlin trees with as showy flowers, and they are certainly very imposing and exceedingly attractive.

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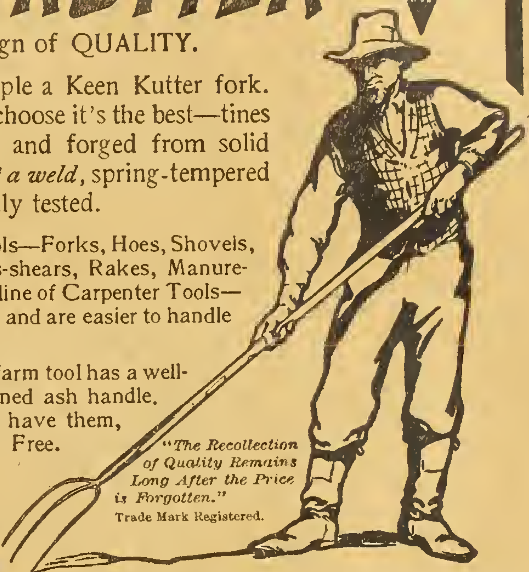

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California Horticulturally

A USE FOR UNMARKETABLE FRUITS.

The passage of the Payne bill, providing for the use, free of internal revenue tax, of domestic alcohol, rendered unfit for use as a beverage, and which goes into effect June 1st, 1907, promises to open a wide field for the California fruit grower. At the present time there are large quantities of inferior grade raisins and prunes, which if marketed at all are sold for a price so low as to be unremunerative to the grower, and which, under the new law, can be converted into alcohol at a fair profit. When in seasons of large crops and poor markets, which have hitherto meant heavy loss to our growers. as they had no other manner of disposing of their fruits, the unsaleable fruit can be made into an article of commerce which will at least leave some profit to the grower. In past years the great question has been what we should do with our unsaleable fruits in season of depression. Prunes and raisins have been fed to stock and hogs and in some cases manufactured into brandy, but the latter process did not pay for the reason that its manufacture was surrounded with so many legalities that growers hesitated to resort to it, while the heavy revenue tax on the finished product made it almost prohibitive. There is no question but that the passage of this act will be of very material benefit to the fruit growers of our State.

* * *

DISTRIBUTING PARASITES FROM THEIR NATURAL HOME.

The new insectary of the Horticultural Commission is now fairly established in Sacramento, and the parasitic insects are doing well. A very large part of these were lost in the San Francisco wreck, but enough have been saved for a fresh start and with the improved conditions in their new home they are doing well, and it is hoped that in a short time they will be numerous as ever. The Comys fusca, the internal parasite of the brown apricot scale, is now breeding out in large quantities, and hundreds of colonies of this insect have been sent out into infected sections during the past week.

* * *

CONTINUING THE PEAR BLIGHT WORK.

The work of fighting the pear blight is being continued in the infested sections of the Sacramento Valley, although the more active operations were suspended some weeks since. The principal work now is in cutting out new cases where they show themselves. Prof. Waite writes us that he will be in California again probably in August, and arrange for another winter's campaign against this disease.

* * *

HEAVY DAMAGE TO CHERRIES.

The heavy unseasonal rains this year have done much damage to the fruit crop, especially to cherries and peaches. The black cherries suffered the most, the Tartarians were almost a total loss. The cherry was the one fruit crop which promised especially well early in the season, but the rains caught it in the most vulnerable season and ruined the hopes of the growers for a big crop. Prices for this fruit have gone soaring, and in the center of the cherry district cherries are retailing at two pounds for a quarter.

* * *

HEAVY PLANTING OF PEACHES.

The peach seems to be the coming fruit both in California and the East. I notice from Eastern exchanges that in Northern Texas, Georgia, Missouri, Indiana, and other States enormous areas are being set out to peaches, while in California for the past three years the peach has most decidedly grown in favor. and during that time more of this fruit has been planted than any other. This season the demand for peach stock was so large that our local nurserymen were unable to fill it, and already heavy orders for peach stock are placed for next spring.

* * *

PRUNE PRICES FIXED.

The Santa Clara Valley prune crop is reported as light again this season, and the output will fall much below the usual average. This, together with the shortage of carry-over stock and of drying fruits has given the growers hopes for better prices this year. A meeting of the growers, or a number of them, was recently held for the purpose of considering the prospects for the season, and it was decided to place the basic price at 3½ cents for the four sizes. Other sections of the State report a fair to good prune crop, but in view of the fact that there is now a shortage in the dried fruit stock and an active demand, there should be no difficulty in the prune growers opening the market on the basis agreed upon, which is very reasonable.

* * *

HELP FOR THE FRUIT GROWERS.

There should be no scarcity of help in the orchard and field this season. The destruction of San Francisco has dispersed tens of thousands of its population to different parts of the State, and of these a great part have found their way into the country. Most of these will be glad to obtain employment in the orchards to tide them over until they can resume their usual vocations, so that the annual outcry about lack of help will not probably be heard this season. It will be a good thing for these people to get employment for it will go far toward tiding them over their period of adversity. Already we hear of numbers of San Francisco sufferers who have taken kindly to orchard work and their number will increase with the increasing demand.

* * *

FRESH FRUIT SHIPMENTS LIGHT.

Shipments of fresh deciduous fruit from the northern counties have so far been light, falling below the normal up to the present time. The principal part of the shipments have been cherries, and the recent heavy rains put a stop to this shipment to a great extent, as a large part of the ripe fruit was damaged. Apricots are now coming in but the crop of this fruit is very light, so that we can not look for heavy shipments until later in the season when plums, peaches and pears begin to go forward. The heaviest shipments of fruit this year will be grapes, late in the season. There is every promise of a good crop of grapes. and very large areas of new vineyards are coming in. There has been a great deal done in the way of vineyard planting during the past four years, especially of table grapes, and the output of this fruit should very materially increase now with each season.

* * *

HAS FAITH IN PEARS.

Howard Reed, a prominent pear grower of the Sacramento Valley, evdently has abounding faith in the control of the pear blight. He has not only taken care in cutting out the blight from his own trees, but has leased several large pear orchards for a term of five years, with the firm belief that he can control the blight and make his venture a profitable one. This demonstration of faith on the part of a practical man like Mr. Reed is worth more than all the theories that can be advanced. Mr. Reed knows of the work of eradication that has been done, and evidently has full faith in its efficiency.

SEEDLESS BERRIES.

We have heard of many so-called seedless berries and have seen a few. Several subscribers have sent in fruit from what was claimed to be the "Seedless Blackberry." Others, whose word is perfectly good, have stated that berries bought under the above name have been fairly congested with seeds. Two dealers who have advertised in the Cultivator, have written disappointed buyers that they are not seedless the first year, but become so the second. So far as tried, this has proved untrue and we fully believe that all so-called "seedless blackberries" are anything but seedless. Until we have proof of the genuineness of such claims the Cultivator will not hereafter print any advertisement of such stock.

RENOVATING SOILS.

To build up and maintain fertility in the soil, feed a large part of the crops and return the manure to the land. If manure is not available, plow under crops grown for the purpose. Plow deep (but do not subsoil). Grow leguminous crops for the nitrogen they add to the soil.

Commercial fertilizers and lime may be important means of improving the soil, but the fertilizer requirements of different soils and different crops in different seasons are so little understood that we are not yet in a position to make positive recommendations that are of general application.

WHAT NODULES DO.

From the results of various experiments and observations at the Michigan experiment station it is concluded that, while nodules on the roots of soy beans and cowpeas on fairly fertile soil may not noticeably increase the yield, they may increase to an important extent the relative and absolute amounts of nitrogen in the plants and thus add to their value as green manures and as food.

The Pomona Fruit Growers' Association, having discontiued fruit drying, have on hand 9000 drying trays, 500 picking boxes, and two graders which can be had at a great bargain by addressing R. D. Russell, corner Phillips and Ellen Sts., Pomona, Cal.

Dried Fruit Producers
Will save good money and much anxiety, by getting a
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TREE PROTECTOR
Made of Yucca Palm

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18 inch long	12.50	per	1000
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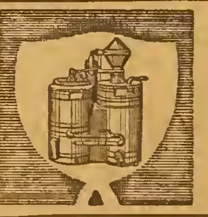

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A1 Valencia Late Orange Trees

Owing to an unprecedented demand for Valencia Late Orange Trees during the present season, the market has been nearly exhausted, with the result that many have been unable to plant for want of good nursery trees. In the face of this situation one of our heavy contract buyers at the eleventh hour changed his order from Valencias to Navels, which put us in possession of a large block of one-year-old buds of prime quality and ready for immediate delivery. This stock is first-class in every particular and will be sold at once, as the demand for Valencias exeeeds present supply. **If you are in want of Valencia Late Orange Trees it will be to your interest to correspond with us at once in relation to this stock. First come, first served; write today.**

San Dimas Citrus Nurseries **San Dimas, Cal.**

With the Citrus Growers

BY J. W. MILLS

PRUNING ORANGE TREES.

Now is the time when bearing orange trees should receive what pruning they may require. We refer to Navel orchards, which in most cases are now picked clean. A one-time prominent orange grower but who now is engaged in building houses on sand, used to say at citrus growers' meetings. "When ever the passion comes over you to prune your Washington Navel trees, go away from home till the passion leaves you." That was good advice if the passion was to prune them after the plan laid down by deciduous fruit growers, but when the proper idea is conceived it is very poor advice. Opening up a tree so that it is goblet shaped is not pruning, but the removal of such interior brush that is past usefulness is good orange pruner's work. Branches that are trailing on the ground or whose fruit will be borne to the ground when loaded, should be cut back so that all fruit will clear the ground, for the great part of such fruit will never make good fruit. It will lie in the mud during the rains and be bruised more or less during wind storms.

It is no easy matter for a novice to pick out the branches which are past usefulness, for few of such branches are entirely without some healthy looking wood and even leaves. There may be a lot of dead twigs on the inside of the tree, but the tips usually find their way out to the open. Thinning these out so that the overlapping clusters of leaves on the outside of the tree will not shut out the sunlight is the essential point to keep in mind when pruning the orange. Of course all the dead wood should be removed. This will be a big part of the first pruning if the work has been put off till the trees are ten or fifteen years old. After the first pruning there will be some dead wood to remove from year to year, but there should be very little if the regular annual pruning is faithfully followed.

It is only by getting in and doing the work that the "hang" of the work can be had. A person may figure out and tell how to do it, but in order to do that he must suppose an ideal case to fit his imaginations and when the grower goes into the orchard to put these ideas into practice he can't find a tree to exactly fit the case and where is he? Up a stump or up against a tree? It makes no difference how long a man has been a pruner of any kind of fruit trees, the first few trees that he prunes at the beginning of the season occasion more thought and difficult work than all the pruning that follows. He will almost invariably go back and prune his first trees over again. In pruning the orange tree, the pruner must keep in mind that he wants to get light into the interior of the tree, but not so much so that it will turn the fruits a light color or allow a person to see through the tree from a distance. That would be butchering. not pruning. There is a happy medium that will permit the blossom to grow and the fruit to set on the interior of the trees without producing light colored fruit. Every grower knows that the best and highest colored oranges grow on the shadiest portions of the trees. No two trees are just alike and consequently cannot be pruned alike. This forces a man to work out the problem for himself.

Mr. C. C. Chapman of Fullerton has worked the problem out to a nicety and gets practical results that count in dollars and cents.

The topping back of an orange tree is simple in comparison with the other part of the work. It should consist of removing any branches that project high above the main body of the top or out at the sides of a tree. This will sometimes be most advantageously trimmed by removing the branch clear back to the trunk or to a larger branch. More often it should be cut out at a fork. Never cut so as to leave a blunt stub.

It has been demonstrated by several of our best growers that when young orange trees, especially Valencias. send out rank and heavy growth, the trees are much strengthened and relieved of future propping by cutting back the longest and strongest shoots to one of more moderate growth. This improves the shape of the tree and makes it stockier. Trees treated so will not be so large at the end of a given time, but they will hold up a larger load of fruit than trees which have been allowed to go unpruned.

Riverside has navel oranges 16 inches in circumference and grape fruit at 20.

GREEN MANURES.

The practice of plowing under green crops as manures is not very general, and we do not know as much as we should like to of the value of this method. Some crops do not thrive when sown on land into which a green crop has recently been plowed. This is particularly true of those crops that like a solid seed bed, or which are sensitive to acids. When a heavy green crop is plowed under, it goes through a fermentation not unlike that which occurs in a barrel of kraut, resulting in the formation of a considerable amount of acid.

Alfalfa is particularly sensitive to acids, and it also requires a compact seed bed. It is unwise, therefore, to green-manure the land just before seeding to alfalfa. The cereals, particularly wheat and rye, do not do well after a green manure. On the other hand, potatoes and corn are not seriously injured by green manures. In fact potatoes are benefited by them, since the resulting acid condition of the soil prevents the development of potato scab.

WANTED

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The Ornamental Garden

BY ERNEST BRAUNTON, LOS ANGELES, CAL.

FLORAL SHOW ECHOES.

At the Los Angeles Floral Show in May we saw, for the first time, Burbank's Crimson California Poppy, and don't like it a little bit. It is far from crimson and isn't even a good pink. It will never prove a garden favorite.

His Shasta Daisy was in evidence by hundreds, and made a fair show. For those who wish a large mass of white in the garden or a large coarse flower in the house, it is a good thing. It keeps splendidly, and if mixed with something " light and airy" either in foliage of flower sprays, would make a fair table decoration.

A new Marguerite, which "knocks the Shasta Daisy all hollow," as one visitor put it, is the Queen Alexandria, a half double form of the common white that is a prize winner whereever shown. Like the common one, it has a single row of petals, but around the center it has a finely cut row of about a half inch wide. It is twice as large as the common.

BEAUTY OF PLANTS.

The more fully the observer is familiar with the functions of plants and the structure and purpose of their leaves and flowers the more fully and completely will he apreciate and interpret their beauty and the refined sentiments they represent.

Plants are the missionaries of nature constantly at work attempting to cover some ugly scar which civilized man has made in his struggle to wrest from the earth the living which he claims she owes him. If you will but give nature the suggestion of your wishes in the form of a few choice seeds she will paint for you the rich shades of the pansy or the phlox; she will carpet your floor with a velvet rug of green and strew upon its surface in bold contrast the golden disks of the dandelion or the bright, saucy faces of the crocus. She will drape your walls with a festoon of green and hide therein rich gems of purple, of crimson, and of white, and, if you ask it, she will screen one apartment from another with barriers of green which may or may not carry bright floral gems.

CHRYSANTHEMUM RUST.

The chrysanthemum rust has invaded America within the last decade, and in various places has done injury to the chrysanthemum industry. The rust will grow only upon the true chrysanthemum (Chrysanthemum Indicum), and not upon daisies, costmary, or other allied species, or upon more distantly related plants. This rust appears to be a native of Japan, and has been introduced into Europe and America through commercial agencies.

In the western world the fungus produces only uredospores, which are efficient for spreading the disease under favorable conditions, but not for carrying it through uncongenial periods or for maintaining the fungus in full vigor. So long as teleutospores do not appear, the disease is likely to be easy of control, and at present none have been found outside of the orient. Care to keep out the disease, and handpicking with total destruction of badly diseased plants when it does appear, should be effective in wholly evading the disease or in eradicating it within a year or two. Spraying all plants of a lot frequently with Bordeaux mixture or sulfide of potassium will doubtless assist in keeping the disease in check.

USE OF PLANTS.

The appropriate use of trees, shrubs, vines and herbaceous plants in the adornment of city, village, suburban or country home grounds gives a charm and beauty which are interesting and pleasing to the passer-by and to the occupant of the home. Plants are a means of expressing restfulness and beauty. Their gradually changing aspect with the succession of the seasons heightens their pleasing effect and relieves the monotony. The changes which occur in the life of vegetation during the year have caused man to speak of the stages of human existence as the "spring," "summer," and "autumn" of life. The leaf, the branch, and the flower, as well as the general form of the plant, manifest a grace and beauty which art endeavors to copy. While art can not take the place of nature, it nevertheless plays an important part in teaching us to see and appreciate the beauties of nature. After the eye has been trained to see and the mind to interpret the beauties which the eye beholds, then association with nature produces its greatest effect.

SHADE TREES.

We, of today, enjoy an hour's idleness beneath the shade of some spreading tree and in this corner of the world, enjoy it none the less because the air is laden with the orange bloom's fragrance and the sleepy hum of insects as they fly from bloom to bloom.

We are apt to be ashamed of this in the busy struggle for existence of the 20th century; but it is as much a part of our nature today as it was many centuries ago, when the patriarchs sat beneath the shadow of their fig and vine, and no picture of the Garden of Eden would be complete unless supplied with some spreading trees under whose grateful and refreshing shade our first parents might take their noonday rest, and ornamental trees from whose symmetry and beauty they might take their first lessons in aesthetic art.

ODD PLANT LIFE.

The delighted plant-lover, entranced by the rich color, grace, delicacy and fragrance of this plant or the majestic grandeur of another may well feel that—for the moment at least—his cup of joy is full, but if he is so fortunate as to be in the way of acquiring a systematic knowledge of plants, an ever deepening interest is added to his pleasure. Systematic knowledge is to be understood, as relating to position in the vegetable world, or scientific classification. The "Natural System" which has universally superseded the arrangement of Linnaeus, aims in general terms to bring together plants having the greatest number of resemblances. Viewed in this light, botanical names become fraught with meaning—with an intelligence that constantly expands while gaining in precision in proportion to the advance in experience; a panorama is presented to the mind the details of which continually increase in interest and vividness.

Unsuspected resemblances between plants are often hidden by wide differences in their general appearance and from this follow the many curious surprises to be found by glancing at a list of the genera of any one family. Let us then take, at haphazard, a few of the common plants of garden or field and see what they will tell us of relatives seldom considered as such except by specialists.

Sitting in placid reflection, upon your rose-embowered veranda, the sky-line is broken by the sombre spires of the blue gums, bowing in majestic grace and haughty recognition to the gentle orange-scented breeze, as you gaze in contented mood, perhaps you would be startled into a belligerent denial if told that those trees, towering more than a hundred feet above the classic myrtle beside the house, were of the Myrtle family. Yet such is the case. In this instance, the features common to both plants are not easily recognized. They could be quickly determined by checking with the description limiting the family. The true myrtle referred to is not to be confused with the periwinkle, a creeping vine sometimes wrongly called "myrtle," but really a dogbane.

The claim is made that Eucalyptus amygdalina is the tallest tree in the world. Eucalyptus giganteus is apparently is not to be sneezed at, it is reported to attain 400 feet in height and 100 feet girth. (Ketchum, Bot. of Academies and Colleges, p. 100, as to E. giganteus.) The pomegranate, formerly placed in the myrtle family, is now classed with the crepe myrtle in the Loosestrife family. There is not I believe, any member of the Myrtle family indigenous to the United States. Other plants of this family are the rose apple, the guavas, the bottle-brushes, and the Brazil nut tree (Bertholletia excelsa.) What we know as the Brazil nut is the seed, of which 18 to 24 are inclosed in a round shell opening by a pore at the top; the shell is half of an inch thick and so hard that an ax is required to break it.

An amazing range is found in the limitations of families from the Hornworts, comprising one genus of only one species, to the Daisy or Sunflower family embracing, approximately, 766 genera and 9800 species. So large a group of plants admits of wide variation in appearance, and it is hardly to be expected that the common and detested cocklebur should be recognized as allied to the daisies and sunflowers.—L. A. G.

SHADE TREES and EUCALYPTI

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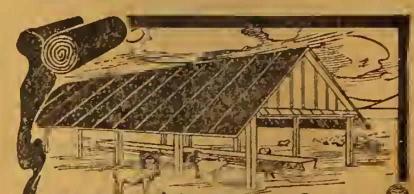

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In the Vegetable Garden

BY ERNEST BRAUNTON

LATE VEGETABLES.

All kinds of summer vegetables suitable for a warm climate can still be sown or planted. Melons can be planted early in July and come in fresh in the fall quite different from those that have been bearing all summer. Tomatoes, summer squash, corn, beans, etc., will be in perfection when cooler weather comes in the fall. It will be almost impossible to start those things without thorough irrigation and plowing. Under such conditions you can see them grow day by day.

SEEDS AND PLANTS.

The supply of seeds for the garden should be secured some time in advance of the planting season. During the winter months send for the catalogue of some seedsman in your part of the country and make a selection of the kinds and quantities of seeds that you desire to plant. Garden seeds can frequently be secured of some local dealer who handles them in conjunction with other goods. Many of the garden seeds lose their vitality after one year's time, and old seeds should, as a rule, not be relied upon.

Throughout the colder sections it is desirable to start plants of certain crops before the danger of frost is past. The simplest method of starting a limited number of early plants is by means of a shallow box placed in the south window of the dwelling. After the plants appear, the box should be turned each day to prevent the plants drawing toward the light.

THE CHAYOTE.

The chayote is a climbing vine belonging to the Cucurbitaceae or gourd family, but to a section different from that which includes the squashes, melons, cucumbers, and other related plants in general cultivation. The fruit of the chayote contains a single, short-lived seed, and it is probably owing to this fact that it is not so well known as its relatives in tropical and semi-tropical countries.

The introduction of a superior variety of a plant already in cultivation is no longer attended with any special difficulty or delay, but new plants are still popularized with extreme slowness until they reach the point of commercial importance. Particularly is this the case when, as with the chayote, the seed can not be kept in stock or handled in large quantities by dealers, who have thus small incentive to advertise or make other special efforts to bring the new plant before the public.

The culture of the chayote is extremely easy when once a beginning has been made, and its desirable qualities are such that in spite of the obstacle of a difficult seed supply it has gradually made its way from Mexico through tropical America to Brazil, and is also known at many points in the Old World, from Spain and Algeria to the East Indies and Australia. But this extension of distribution is in many cases of recent date, and the value of the plant is still very imperfectly realized, even among intelligent agriculturists of regions where it is not unknown. In addition to the fruits, which are considered an excellent substitute for the summer squash or the vegetable marrow, though very different from either, the climbing vine is of use as an ornament for covering fences and arbors, the numerous flowers are rich in honey, and the large tuberous perennial roots are charged with starch and furnish a wholesome food material comparable to the true yam.

SPINACH.

Spinach thrives in a rather cool climate and attains its best development in the Middle South, where it can be grown in the open ground during the winter. Large areas of spinach are grown near Norfolk, Va., cuttings being made at any time during the winter when the fields are not frozen or covered with snow. When the weather moderates in the early spring, the plants make a new growth, and a large crop of early greens is available.

Sow the seeds of spinach in drills 1 foot apart at the rate of 1 ounce to 100 feet of row, or 10 to 12 pounds to the acre. To produce good spinach, a rich loam which will give the plants a quick growth is required. As ordinarily grown, spinach occupies the land during the autumn and winter only and does not interfere with summer cultivation.

Spinach is an easily grown garden crop, and there is, perhaps, no other of its kind that will give as good satisfaction. Three or four ounces of seed, planted in the autumn after a summer crop has been harvested from the land, will produce an abundance of greens for the average family during the late autumn and early spring. In gathering spinach the entire plant is removed rather than merely cutting off the leaves. The larger plants are selected first, and the smaller or later ones are thus given room to develop. No thinning is required if this plan of harvesting is practiced.

GARDEN BEANS.

If the crop is planted for string beans the rows are made about two feet apart, and the hills about six inches apart in the row. From one to four plants are allowed to grow in a hill; depending on the strength of the soil. The hills are planted farther apart if the variety is one of the larger bush beans. It should be the aim in planting to get the row as narrow as possible; it is better to drop a bean every inch than to drop six beans every six inches, provided it can be accomplished as easily. When the rows are straight and very narrow it often happens that there is no occasion to use the hoe at all. Excellent crops of beans are grown without taking a hoe into the field at all.

Vegetable growers having only a few acres will doubtless find it cheaper to have fertilizers mixed at the factory, but those who cultivate large areas of one kind of vegetable should be able to save the profit that the manufacturer makes on mixing the fertilizer.

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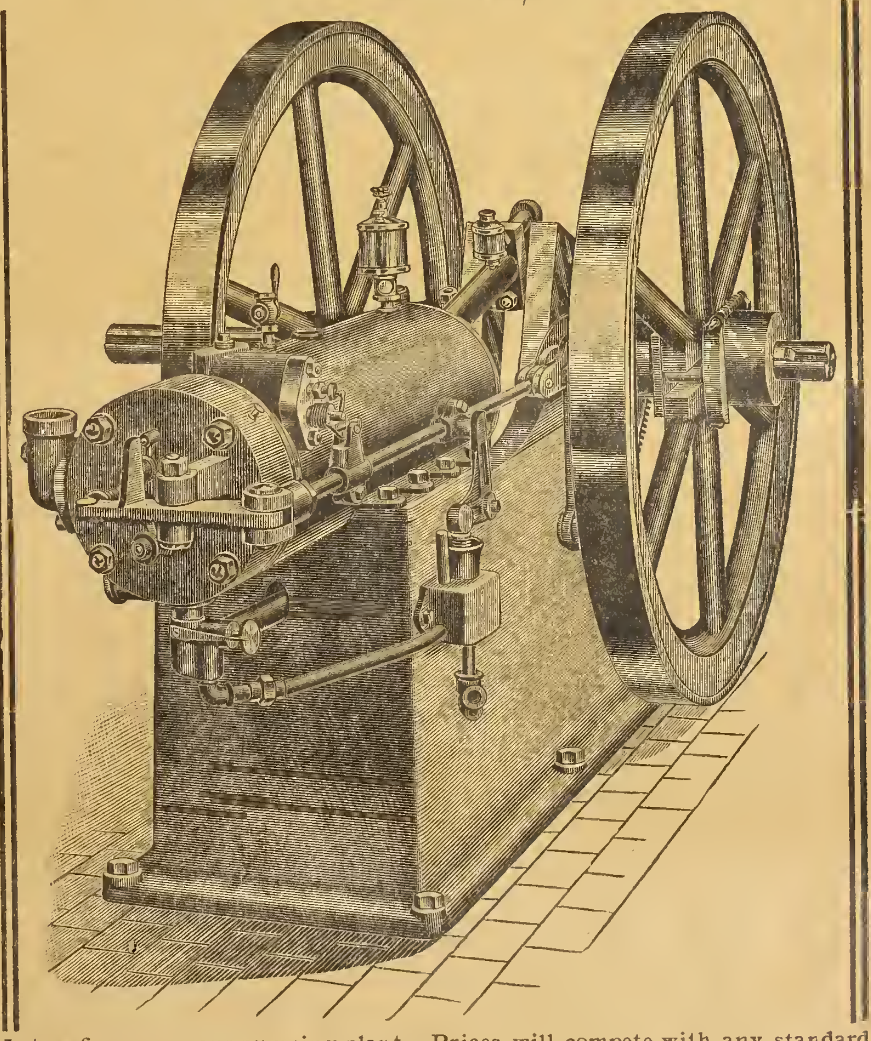

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Our State Agricultural Society.—The directors of the California State Agricultural Society have determined to put forth every effort possible for reviving interest in the institution, enlarging its field of operations and increasing its usefulness to the great industry for which it stands. This is a big State with varied interests, but it is the hope and purpose of the present board of directors to extend the work and benefits of the society to the remotest parts of California and to all the industries that are comprehended by the word Agriculture in its broadest sense. In this endeavor they ask the co-operation of the press and the people. They realize that such co-operation is essential to success—to the creation of a sentiment that will make their work effective.

It is the desire of the directors that the secretary shall reach out for the best that is being done in this State, and in this country, and in other countries in industrial lines, and give the information thus obtained to the people in periodical bulletins.

It is the aim to get in closer touch with the Agricultural Department of our State University, with the Agricultural Department at Washington, with the Experiment Stations of the Federal Government, with other State agricultural societies, and with Consular reports that have relation to our interests, and keep our people advised of the latest and best that is being done in the world in those particular industries that most concern them. In short, the intention is to extend the work of the institution along all lines of endeavor in which it may be of service to the people of California within the limits of the great field comprehended by its name.

The work immediately in hand is the preparation for the Fair of 1906, which is scheduled to open on the 25th day of next August. In harmony with the general purpose to improve all features of the Society's work, it is the determination of the directors to make this the biggest, best, most attractive and most comprehensive display of livestock interests and other industrial resources ever assembled in California. The aim will be to secure all products of the State from every part of the State, and present them in a manner that will not only be attractive, but a source of instruction to every one seeking a broader knowledge of California's possibilities. With proper encouragement to reinforce the high aim of the directors, the State Fair can be made the greatest annual event in California, and the society one of the strongest instrumentalities for the development on higher lines of the State's agricultural and other industrial resources.

* * *

International Institute of Agriculture.—It is gratifying to learn that we are to have a great International Institute of Agriculture as a permanent institution. The King of Italy, who has been foremost in the work, after consultation with men of prominence in many countries, issued a call for a meet at some future time, and it is stated that thirty nations, including our own, have notified the Italian government of adherence to its proposals, in so far as to promise representation at the conference.

It is proposed to limit the main functions to the collecting, summarizing and disseminating of correct and timely information, and in a form in which it can be easily availed of. This information is to consist of the available quantity on hand and the condition of the growing crops of any and all the various staples of agriculture. Such data will include information respecting crops, labor, prices, freights, discoveries, inventions and markets.

The importance of this step will be manifest when it is considered that the world summary of any one agricultural staple forms the basis of the price; in other words, the world's price of the staples of agriculture is arrived at by a summary of the stock on hand and the conditions of the growing crops. At the present time these facts are gathered by only a few of the governments of the world, necessarily involving more or less speculation as to the conditions in those producing countries where no such information is gathered or disseminated.

Mr. David Lubin, of California, who has been laboring for years to interest the nations, especially Italy and the United States has this to say of the proposed organization:

"The institute, it is calculated, will do for the staples of agriculture, the things of exchange, what the gold standard has done for the money value, the medium of exchange. It will steady the staples of agriculture and largely replace the speculative field, rendering the prices of staples more stable than they can be under present conditions. The case, substantially, is this: So long as rumors largely make up the world's summary, so long are the staples rendered highly speculative, and so long as this is the case, just so long must there be a persistency in the adverse conditions of the capital and labor of the farm and the capital and labor of the factory.

"Again: Were it even possible for any one nation to introduce efficient methods in foreign countries and produce accurate world's summaries, it would even then be of no value, for the selling nation of the staples is necessarily a bull and the buying nation a bear. Were the selling nation to produce the correct figures they would be disputed by the buying nation, and so on. It would only be acceptable were each of the nations of the world to gather the information and summarize it and that each of the various statements were to tally. This is manifestly an absolute impossibility. It therefore follows, and necessarily so, that all of the nations should combine for the purpose of gathering, summarizing and disseminating the world's information and this is the purpose of the International Institute of Agriculture."

* * *

"Please Re-print.—Every week the Cultivator receives a number of requests like the following:

Editor Cultivator: Sometime ago you published in your paper an article on the gopher. Can you forward me the number or give a reprint of it. I missed seeing it and I am anxious to get it.—C. J. B."

Of course we cannot remember all that we print. To keep back numbers of the paper world require a warehouse. To reprint such articles would crowd out others of value to many readers and would only aid the enquirer. Subscribers should either keep a file of the Cultivator or cut out such articles as are of special interest to them. In the case above cited the subscriber evidently missed what to him was a valuable article, through a careless perusal of the paper. In this progressive age we must go forward, ever presenting something new, and cannot re-hash unless an article is of unquestioned value to a large umber of readers and has not been published during the past twelve months. We are often criticized for re-prints by readers who have no interest in the matter reproduced and who feel aggrieved at again being confronted with it.

The Cultivator has the largest and most able corps of paid writers of any agricultural paper west of the Mississippi and it really seems that interested readers might, with profit, preserve a file of the Cultivator for future reference.

* * *

Santa Ana Plant Garden.—The Bureau of **Plant Industry has decided** to abandon the Plant Experimental Station at Santa Ana, and Prof. N. B. Pierce is now engaged in removing all of value that belongs to the government, with the idea of continuing the station for himself along commercial lines. With this end in view, he severs his connection with the Bureau on June 30th.

The abandonment of this garden will cause deep regret in the minds of all plant lovers for some truly wonderful work in hybridization and plant breeding was well under way and the next few years would have marked the introduction of many new and valued plants, specially adapted to our soils and climate. But a few months ago the writer thoroughly inspected the experiments under way and is much surprised to find that all the past years work is to come to naught, so far as Uncle Sam is concerned. Prof. Pierce has done noble service since his residence in Santa Ana and we sincerely hope he will prosper in all that he undertakes.

* * *

Necessity for Economy.—The scarcity of water during summer, in many sections, should set people to thinking and devising methods whereby a recurrence of this state of things would not happen. There are hundreds of canyons in our mountains where the winter rains cause good sized torrents to rush down which, on reaching the valleys below, cause great destruction. It appears to us that if storage reservoirs were constructed, which could in very many instances be done at comparatively nominal cost, the greater part of this water could be stored and in extremely dry seasons used for irrigating. The mountain water which is now piped could be used for domestic purposes and this stored water would help tide over a dry season in good shape. Water should be conducted from all reservoirs in pipes, not open ditches, and every possible means taken to prevent loss by seepage and evaporation.

* * *

Our Beautiful State. Many have been the complaints, among all classes, over the great amount of cloudy weather this spring has brought upon us .But the clouds and their attendant rains have wrought well for all our people. Comparatively few have been damaged by storm waters, and these few, in most cases but lightly. The compensation has come in an increased water supply, assurance of better late crops, and extended grazing season, and last but by no means least. the whole State looking fresh and green down into June, a most unusual condition. This most exemplary weather for general agricultural crops will fill our State, from Siskiyou to San Diego, with showers of golden coin. All hail the cloudy, rainy springtime! May its precipitation never never grow less.

FREE SEEDS.

The free distribution of Government seed might be narrowed down close to the vanishing point by a system of elimination. On every packet of seed sent out from Washington there is a printed request that the recipient will report to the Agricultural Department the luck that he has with the contents. The department clerks are never overworked after the harvest in tabulating such reports. So here's the plan:

Unless the farmer writes, "Dear Government, your Pride of the Can Corn was a wonder and one head of your Sure to Head lettuce headed,'" or words to that effect, put that farmer on the black list and ignore all future applications from him for free seed. His Congressman will be able to tell him that it is his own fault, and no harm will be done.

The plan will not be complicated by a new batch of applicants this year, for there are not going ot be any more farmers after the present generation dies out. All the sons of farmers are becoming motormen or bankers or drivers of ice wagons.

NEWS OF COUNTRY LIFE IN THE GOLDEN WEST

HORTICULTURE.

Grapes are ripe at Brawley.

The "June drop" of the orange is with us.

Warm weather is bringing out the codling moths.

Napa County reports 'best grape crop for 15 years."

Hail has damaged the apple crop in the hills above Porterville.

June lemons are at the highest price ever known for this month.

Navels are about gone, not over 50 cars remaining in the state.

The Sacramento pea crop will be a fourth heavier than last year.

A car of seedling oranges from Colton sold in the east for $1,748.

Prices of orange lands in the Porterville district are on the jump.

Grapes about Santa Rosa are bringing from $25 to $30 per ton.

Imperial reports seem to favor the more extensive planting of apricots.

Apricot pits are bringing $15 per ton this year for German shipment.

Anaheim walnut growers claim the crop will be double that of last year.

Downey reports a heavy crop of walnuts on the trees in that section.

Cherries about Geyserville are bringing from 4½ to 6 cents a pound.

Some Muscat grapes about Oleander were knocked off the vines by hail.

Apricots at Santa Paula are bringing $40 per ton green and 11½ cents dried.

A Riverside man has perfected and patented a machine for making orange boxes.

Apricots about Sacramento are a failure and peaches are but a little better.

Late rains have caused the vineyardist to give his soil an extra cultivation.

James Mills is planting seven miles of robusta palms on Arlington's streets.

Imperial Valley grapes promise a heavy crop. No mildew has appeared to date.

Six hundred dollars was offered last week for one acre of Malaga vines at Thermal.

Sol Edwards of Calexico has 1600 acres of fine grain under water and of course ruined.

About Vacaville the present years fruit shipments will fall way below those of last year.

The apple crop at Seven Oaks in San Bernardino county was entirely frozen by late frosts.

The severe rains of last week have seriously delayed fruit shipments at many important points.

While the Tulare County apricot crop is very light, in the Sultana district it is unusually heavy.

Buena Park, a corn growing section near Los Angeles, reports the finest crop outlook in many years.

The Tule River Citrus Association is a new one, to include the South Tule, Pleasant Valley, and Globe districts.

Cherry picking is in progress in the Yucaipe Valley, but the crop will be light by reason of damage from late frosts.

At the annual meeting of the Butte County Citrus Association, in Oroville, June 2nd, it was decided to build a packing house.

Shot-hole fungus seems to have damaged apricots but little this season in many sections but Hanford reports a heavy loss.

Up in Happy Valley, near Anderson, hail fell last week to the depth of three inches, completely stripping trees of fruit and foliage.

It is estimated that we have yet to forward 2000 cars of Valencias, 300 cars of Sweets, 100 cars of seedlings and about 150 cars of St. Michaels.

The Southern Pacific has put on an exclusive berry train between Salinas and San Francisco for the benefit of the berry growers in the Pajaro Valley who ship about 800 chests per day.

AGRICULTURE.

Watermelons are ripe on the desert.

Dixon reports "all crops are splendid."

Green Valley will have a heavy crop of hops.

Alamitos beet crop will be the "largest ever."

Chino has 10,500 acres of beets and Oxnard 16,000.

The potato moth is rather numerous around Salinas.

Brawley barley shipments average two cars a day.

Upland boasts of oats six feet and seven inches high.

Golden Heart is the leading celery in Orange County.

Winters is shipping large quantities of beans and squash.

Lemon will have a heavy acreage of tomatoes this season.

The Imperial Valley will market 400,000 sacks of barley.

Ventura district has about 45,000 acres of beans planted.

The Escondido Valley had a June rain, a rare occurance.

Olive farmers are all turning to portable pipes for irrigation.

The hay crop around Saticoy was damaged 75 per cent by rains.

Guernsey, in Kings County is becoming a beet growing district.

Springville in Tulare Coutny is becoming noted for its "praties."

Soledad region was benefitted rather than damaged by the late rains.

There is a labor famine in all hay and grain sections of this State.

The late rains will result in an increased beet acreage in all sections.

The rain damage to grain about Hollister is estimated at 15 per cent.

Corcoran farmers report plenty of rain, but no serious damage resulting.

Celery from the Smeltzer district was 2275 cars against 1800 last season.

Ventura County has been presented with a 300-acre park covered with fine trees.

Imperial Valley ranchers get twenty-five tons per acre of sorghum cane for feed.

Cut worms destroyed a few acres of beets at Alamitos [illegible] replanted.

Farmers in every county are complaining of too much cloudy weather this spring.

Desert towns are shipping onions, cucumbers, and squashes by car loads to the East.

Banning reports hundreds of acres of Texas red oats six feet high, with a heavy yield.

2575 tons or hay arrived in San Francisco last week and yet more is badly needed.

Hanford is bragging of oats over 8 feet tall and a half inch in diameter of stalk—Next!

Brawley shipped the first crate of Canteloupes May 28 and it sold in Los Angeles for $15.

The damage to the hay crop caused by the last rains seems to be confined to a discoloration.

Twenty-seven hundred cars of celery will be shipped from Smeltzer the coming season.

The Coachella Submarine has suspended publication until the editor gathers his melons.

The beet crop around Los Alamitos is in the very "cream" of condition, and promises fine.

Around Winters the farmers have just harvested the heaviest crop of hay for many years.

Fresnoites claim the Kearney estate is worth over a million dollars if put on the market today.

The grain harvest is on in the Imperial Valley with barley averaging 20 sacks to the acre. This will net the growers about $12 per acre.

Five thousand six hundred and ninety-six acres of celery will be planted around Smeltzer next year.

Around Redlands the army worms have been so bad that in one section the ranchers cut their alfalfa, let it dry, and burned it to kill the worms.

Salinas Valley expects to harves common barley, 50,000 tons; chevalier barley, 35,000 tons; oats. all kinds, 5000 tons.

Many thousands of acres of grain around Tulare were lost by overflow, no portion of them being of use when the waters went down.

LIVE STOCK.

Asparagus along the Sacramento River will be but half [illegible]

About 700 acres of spuds below Sacramento will yield a heavy crop.

A Hanford sheepraiser sold 1400 lambs for three dollars each last week.

San Jacinto has a new creamery under the able management of Dr. Graeff.

A train load of cattle, averaging 350 head, is shipped from Chino to Los Angeles every week.

Three thousand cattle from Utah are expected at Chino about June 15th to be fed on beet pulp.

Stock raisers declare that the recent investigation of packing houses will hurt their business.

The Colorado River has fallen over a foot in the last week and Imperial Valley farmers feel better.

San Jacinto bee keepers report an unusually heavy crop of honey, while most districts expect just the reverse.

J. C. Rice has sold to A. D. Owen of Fresno the registered Holstein Friesian cow Kaastra Daw's Abbess.

Wild horses are so numerous and destructive about Reno that ranchers have been given permission to kill them.

The Marysville wool growers held another auction on the 8th and sold about 500 bales, ranging from 18 to 24 cents.

It is estimated that the Neill-Reynolds report has damaged the live stock industry in the United States to the extent of $150,000,000.

Buena Park residents say that the poultry crop bids fair to become their principal harvest. Lucky the section which can reap every month in the year.

Stockmen from Marysville district who drove their cattle to the mountains early in the season have experienced heavy losses in the recent storms.

Beekeepers in the vicinity of Sacramento have organized for protection against the commission men who get most of the profits that should rightfully accrue to the apiarist.

Ten hundred and sixty mules, the largest shipment ever made from the United States, went out from Stockton last week for Guatamala to be placed at work in the "tented field."

LINER ADVERTISING

Advertisements in Liner Column will be charged 1¼ cents per word. No advertisement taken for less than 25 cents. Eight words to a line.

LINERS

RANCH FOR SALE—650 ACRES 90 MILES from San Francisco in fruitful coast valley, 3 miles from railway station, on southwest slope of mountains. Delightful climate; no malaria. Beautiful scenery. A summer resort for city folks. Summer board in demand. Fine fishing. Estimated fire wood, chiefly oak, 10,000 cords. When cleared there will be 200 acres of best apple and vine land and 40 acres orange land. Orange orchards in vicinity. At present 50 head of cattle carried the year round. Springs and ponds. Angora goat business profitable. Seven-room house, stable, small orchard, 10 cows, 2 horses, wagons, implements. A bargain at $11,000. Crops without irrigation. Address Hollywood, Cal., P. O. Box 55.

FOR SALE—OR EXCHANGE FOR TOWN or ranch near Los Angeles or north inland from coast, poultry and fruit ranch of 33 acres, shipping canning and drying fruits. All under cultivation and good improvements. Two hours' ride from San Francisco by cars, one mile from town. Address Box 64, Sonoma, Cal.

MONEY TO LOAN—I HAVE MONEY TO loan on real estate. If you do not want to borrow more than one third the value of your property you can have it at one per cent less than current rates. address Joy A. Winans, 4565 Pasadena Ave., Los Angeles, Cal.

REPRESENTATIVES WANTED IN every county to sell Parafelt Rings for Mason jars. The only absolutely sure and sanitary sealing ring made. Big money for hustlers. Write to T. S. Wilson, 1357 9th Ave., E. Oakland, Cal.

ARE YOU INTERESTED IN FRUIT CANing? We have a book free describing six sizes of canners for the ranch or small factory, ranging from $10 to $125. Send postal with address for it. W. S. Ritchie, Corona, Cal.

FOR SALE—A QUANTITY OF SECONDhand riveted steel water pipe suitable for gravity irrigation system or drainage, sizes 6, 8 and 10 inch. Address Joy A. Winans, 4565 Pasadena Ave., Los Angeles, Cal.

HEALTHFUL VEGETABLE COOKING oils, free from disease. Inexpensive From corn, cotton and olives. Tiny samples 1c each. Also honey and olives. Address W. S. Ritchie Corona, Cal.

BLUE ANDALUSIAN EGGS FOR HATCHING, from three noted strains, $2.50 and $3. Incubator lots $7.50 to $15.00 per 100. Mrs. T. R. Griffith, 3111 Walton avenue, Los Angeles.

MALTESE KITTENS—MALES $1.00, FEmales 75c. Miss Wood, 130 Carey St., Arroyo Drive, Pasadena, Cal.

FOR SALE—A FEW THOUSAND BLUE Gums, cheap to close out, Address L. Z. Huntington, Anaheim, Cal.

FOR SALE—FINE LAND WITH WATER, close in to Turlock. Address Owner, Box 32, Turlock, Cal.

Live Stock and the Dairy

BY MRS. MINNA. E SHERMAN, FRESNO, CAL.

MOISTURE IN BUTTER.

The hand separator used by the farmer, has placed him in a more independent position in regard to the creamery. Before its introduction he was obliged to sell his milk to the nearby man, while with a separator of his own he has a cream heavy in butter fat that can be shipped to a creamery at a distance. If it arrives sweet it is used as cream, if sour it goes into the butter vats. The entire San Joaquin valley is at times shipping to Los Angeles or San Francisco, some of the creameries only churning the surplus into butter, depending on shipping the bulk of the cream away as cream. The natural result is a keen competition among the creameries and the price of butter fat soared away up, to meet this increased price of butter fat, the butter makers began to study to make the over run, or the difference between the amount of butter fat and the completed butter as great as possible, or by increasing the water contents.

It has been claimed that as high as twenty-five to thirty per cent of water was left in the butter, but that is to be accepted with much allowance, for so far, the samples analyzed have not shown so much in any submitted. The Ames Dairy School has given much time to the subject and a study of the carefully tabulated statements is to be recommended to any one that wishes to look deeply into the matter from the scientific standpoint.

The wages of a butter maker has in many districts come to depend on the amount of over run he can show to the manager, or owners of a creamery, so that a knowledge of this subject is well worth while for the milk producer, when by a little watchfulness it will enable him to see where the profits of a creamery is coming from. For, until we have some governing laws or inspection the temptation to make a lower test, or to weigh the cream light at the creamery crops up at every turn of the butter maker's life. Business policy! Yes; policy, a polite name for rank dishonesty. I wonder if people will ever be morally as well as legally honest! So it does not land a man in the pen it is all right to most of them.

The water is incorporated in the butter by churning at high temperature, or by washing the butter in warm water. The commission people, also, take a hand in reworking the poorer grades of butter in tepid water to increase the weight enough to pay for the cost of handling; so the selling of water for butter fat has become prevalent to a marked degree in the past year.

Congress instructed Secretary Wilson to set a standard for water in butter, thereby making excessive amounts illegal, and to have the revenue officers enforce the same, by examination of the output of the creameries. The standard set by Secretary Wilson is 82.5 per cent of butter fat, leaving 17.5 per cent for water, salt and curd. This law, like so many others in this country when of a paternal nature, has never been enforced. The past open winter in the Middle West has brought the matter into plain view, as the surplus butter, becoming a drug to the commission men, caused them to export butter. The London commission men received samples and ordered butter shipments. Now the English laws only permit 16 per cent of moisture and other contents than butter fat in butter. Carload after carload was "turned down" as having 18 to 23 per cent of water.

The New York Review claims that the excess of moisture injured the keeping qualities of the butter, producing a fishy flavor. The fact as proven by a long and exhaustive series of tests by the Ames Dairy School of Iowa is that the excess of moisture was not to blame for poor quality of butter. The creameries were using their best cream to make custom butter containing 15.5 per cent moisture. While in the bulk of the ill flavored bad cream they received, a second grade was being heavily loaded with water, to increase the weight enough to bring in money to pay for a larger amount, to offset the lower price per pound on account of inferiority. Under the existing conditions the creameries by paying a like amount of money for both good and bad cream are not making it any object for the producer to care for the cream, and by caring more to make a large amount rather than a high quality butter, the creameries were cutting into the careful producer as well as into the consumer's pocket. Again an instance where "Honesty would have been the best policy." Prof. McKay was sent abroad by the Department of Agriculture to study the question of butters in the old world. In London he found the French and Danish butters sold highest, these carried from sixteen to eighteen per cent of water.

The next season the Ames School started an experiment in which 55 creameries sent in tubs to be scored. These tubs were then shipped to New York and after two weeks were again scored as to water contents and general quality. These tests were made as complete as possible and continued long enough to cover the season. The records were carefully kept and elaborated into tables. The summing up on the moisture problem was as follows: The average water contents of the 222 samples was 12.73 per cent. The lowest scoring butter, that spoiled the quickest, had only 10.75 hundredths of water in it, while the highest scoring butter averaged 15.42 per cent of moisture. It has been further claimed that butter containing the highest amount of water had the most bacteria in it, or was not as wholesome as the drier butter. There seems to be considerable confusion in the minds of many people about bacteria. Now there are some, that are in much of our food, that are not injurious in any way, nor are they specially detrimental to the food itself. Then another class of them are beneficial, as the yeasts and ferments, another class are the dirt ones, that, while they are unpleasant to think of, in living out their life history produce disagreeable flavors. Another more limited class of germs, by breaking down the foods and by their life actions, convert the foods into ptomaines that are destructive to human health. Then there is another lot, that are introduced directly into the water by carelessness of sanitation, or by sewage contamination. These are partly animal and partly vegetable and are known as the pathogenic or disease germs. This last class it is said are found in the water in butter, but should it be so, it would only show that the butter had been washed in impure water and the difference between 18 per cent and 10 per cent of water would not be much if the water was contaminated. Sanitation of the creamery and boiling of the water used would be the remedies rather than using less water in the butter.

Veterinary Instruments, Black Leg and Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

Poor keeping butter comes from dirty, over-ripe cream and from dirty cans and improperly scalded churns; from dirty milkers and from general carelessness, rather than from the cows or from the water used.

* * *

NO MILK FLOW.

Editor Cultivator:—Please mention through your columns what to do for a cow that has what I call "stoppage." She was on pasture six weeks during her dry period and calved on April 20, but I didn't get her home until

THIS SKIMMING MACHINE takes the cream from the milk quicker than wringers squeeze water from clothes. It gets **a quarter to a half more cream** than by setting, because it uses centrifugal force—a force thousands of times stronger, quicker, more effective than the force that makes cream rise in pans.

Sharples TUBULAR CREAM SEPARATORS

Skimming finished five minutes **after** milking, because boy of ten can run Tubular **during** milking. No skim milk to warm, because skim milk is fed still warm from cow. **Half less washing, labor and expense,** because only cream is put away. Catalog X-260 explains clearly.

THE SHARPLES SEPARATOR CO.
Toronto, Can. West Chester, Pa. Chicago, Ill.

MILK COOLER

See Our **"STAR"** Sanitary Copper Cooler and Aerator, complete with Seven-Gallon Tank,

ONLY $13.00

Will cool 45 gallons of milk per hour to within two degrees of temperature of water.

O. J. WEBER Co.

Manufacturers and Importers of
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Los Angeles, California
Phone Sunset Broadway 5006 Home 3657

Shaken Down and Burned Up

But Still on Earth

Our offices, factory and warehouses are all in the San Francisco ruins. We are already receiving goods from the East, and will be able to take care of your orders for TUBULAR CREAM SEPARATORS, BOILERS and ENGINES, MILK and CREAM TESTERS, TEST BOTTLES, MILK BOTTLES, BOTTLE CAPS, BUTTER SALT, Etc. Our Separator Repair Shop is in running order. Temporary offices have been erected on the site of our factory, Bay and Kearny Streets, San Francisco. Write us and all letters will be given prompt attention. We solicit a continuance of your orders for goods in our line, and will do our best to take care of you.

Joshua Hendy Machine Works
(Cream Separator Department) Bay and Kearny Streets, San Francisco, Cal.

U S U S U S

World's Champion Cow

The Guernsey cow here illustrated has proven herself the biggest butter producer in the world. This letter tells the story.

"Milwaukee, Wis., Feb. 12, 1906.
My Guernsey cow, Yeksa Sunbeam, No. 15439, holds the World's record for a yearly butter-fat production, having made in a year **857.15** pounds of butter-fat. She also made **14920.8** pounds of milk testing 5.75 per cent. fat; this is the largest amount of milk produced in a year by any Guernsey cow.

The butter exhibited from my farm was awarded **FIRST PRIZE** over all at the State Dairymen's Convention at Waukesha, Wis., scoring 97½ points.

I use the United States Cream Separator, of which I have three on as many farms. FRED RIETBROCK."

Don't miss the point of this story: GOOD COWS and the

U. S. CREAM SEPARATOR

is a combination that means biggest profit to dairymen. You feed your cows to produce rich milk, and to get the most butter-fat from that milk you need a U. S. Cream Separator because it **Holds the WORLD'S RECORD for CLEAN SKIMMING.**

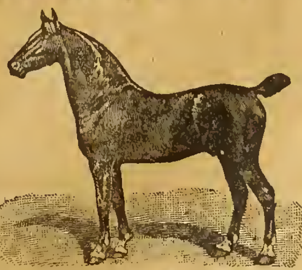
Our new, handsome 1906 catalogue tells all about the U. S. Read it before you put any money into a cream separator. Just write us, "Send catalogue number 2". You'll get one by return mail. Better lay this paper down and write us now while you think of it.

VERMONT FARM MACHINE CO.
Bellows Falls, Vermont.

Eighteen centrally located distributing warehouses throughout the United States and Canada. Prompt delivery. 436

Warranted to Give Satisfaction.

Gombault's Caustic Balsam



Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. ☞Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

Advertising Column for Members

OF THE

JERSEY BREEDERS ASSOCIATION

OF SOUTHERN CALIFORNIA

Organized for the general advancement of Jersey interests, to extend knowledge of their superior merits, for the mutual benefit of members, and to increase the profitableness of one of the State's greatest industries. Breeders are requested to unite with the Association.

BULL FOR SALE

Having sold my ranch I am forced to sell Golden of Biltmore. 60082, a grandson of Golden Lad's. Golden of Biltmore is one of the best. ***If not the best*** sire on the coast. several of his daughters less than two years old selling for over $200 each. Highest bidder for next sixty days takes him. If everything is not just as represented, I will give anyone the ***bull free of charge. I sell on merit.***

C. S. Burgess, Riverside, Cal.

Pure St. Lambert Bull

—ST. LAMBERT OF RAMONA, No. 62633,—

heads the Ramona Herd of Registered Jerseys of

Geo. W. Thomas, Riverside, Cal.

For Sale--Registered Jersey Bull Calves

About 6 months old, solid color animals and first-class in every particular. Out of as fine stock as can be found in this State. Tested dams. Detailed information on application. Address or call any afternoon.

Sterling Milk Company

Office, 205 Tajo Bldg., cor. 1st and Broadway, Los Angeles, Cal.

The Whiting Jersey Stock Farm Co.

Have moved their herd of Jerseys from San Bernardino, Cal., to the famous Imperial Valley, and hereafter their post office address will be Heber, San Diego Co., Cal., from which they will conduct all their business. Abundant green feed every day in the year will be of great advantage in the best development of our young stock.

Whiting Jersey Stock Farm Co., Heber, San Diego Co., Cal.

LEMONITA HERD

Leffingwell Rancho, Whittier, Cal.

Service bull "SARGENT FOX," 64833. Bred on the Island of Jersey. Sire, the great Flying Fox, that sold at auction for $7,500. Dam, Miss Sargent, reserve winner over Jersey; winner of seven first prizes and five championship cups. "One of the grandest cows the island has ever produced."

VENADERA HERD

. . OF REGISTERED JERSEYS

For Sale, yearling bull Ruth's Gordon King, No. 72360 A. J. C. C. He is of richest breeding on both sire and dam's sides. Also three richly bred heifer calves by Marigold's Exile King, from cows that are good yearly producers. For particulars write

GUY H. MILLER, RIVERSIDE, CAL.

Oakhurst Jerseys

Sons of imported Golden Marquis out of prize winning and tested dams. for sale.

L. Bradbury Duarte, Cal.

Kings Victor King of St. Lambert

At head of herd. Young stock for sale.

H. N. WILLIAMS COMPTON, CAL.

the 22nd, her hind teats are all right. Her left front teat has a very poor flow. Her right front teat was the same for about two weeks but grew worse until now it has stopped entirely. That quaretr of the udder has been hard until a few days ago when it began to get soft.—Subscriber, Campbell.

Treatment for this cow has been unduly delayed. The results are a dry cow. What is her money value? If she is simply a cow I would turn her off to the butcher; if she is valuable for her breeding, then simply try ot bring back the milk flow by giving her sloppy or succulent feed and gently drawing on the dry portion of the udder, you know the milk flow can be started on a barren cow, or in an unbred heifer by constantly drawing on the teats, so at milking time go through the motions on the dry teats the same as on those giving milk. Milk the teats on the same side at the same time and keep it up until the milk is drawn clean from the teat in flow. Remember if you have not green stuff for her, make her bran as wet as you can induce her to eat it and salt it to create thirst.

* * *

BALANCED RATIONS.

Editor Cultivator:—In your article on "Balanced Rations for Dairy Cows," you give details of ration as follows: 4 pounds bran, 4 pounds chopped alfalfa hay, 4 cocoanut cakes, 1 pound of oil cake meal. Kindly answer is this for one feed or for one day for one cow. Is the ration you give in other parts of the article for one feed or for one day? Any charges will be cheerfully paid. Stamped envelope.—A. C. R., Los Gatos.

To A. C. R. A ration for a cow, is like that of a soldier, a day's of twenty-four hours' feed. This feed is only the grain part and the cow receives her roughage outside in the form of hay or pasture. This ration is for a cow producing three hundred to four hundred pounds of butter in a year and it must be fed up to gradually. In feeding any animal the feed must be approximate and the cow must be the judge, feed all that is profitable and no more. All rations are for a day. This holds good for all rations except where otherwise specified. Divide it into two feeds, one for the morning milking and the other for the evening. The way I think you have become confused was where the printer set up the words, feed double ration to some cows when it should have been written feed a double feed to the cows marked so and so. Now sometimes this is to cows giving enormously of milk, that are milked four times a day, for the short period of a month or so after freshing. The men at the barns really consider this feed by the canful after the ration is formulated, as so many tons of each. Then the head feeder has bins, holding a ton each, he then has so many sacks of this and of that dry grain put into it, then so many sacks of cocoanut cake, wet, into the mixing box. When we make any very radical change in the feed a box of different size is given to the feeder, and to them it is simply so many boxes full, or a half box to this or that cow. When beginning with a grade herd, be careful you do not overfeed with the expensive parts of this ration. Work up to it, only on the cows that will pay for it. There are so many that make a failure in feeding cows from the financial standpoint. It is with the cow like it is with Dr. Jordan's story of the boys, it is useless to give a fifty cent boy a thousand dollar education and expect as a result a learned man, while with a fifty cent education the boy might have been a good stable buck. So be sure your cows have dairy inheritance enough to turn their food into butter and milk; if they have, then feed liberally.

Cream Separators, all sizes, all prices. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

EMPIRE RANCH

KINGS COUNTY, CALIFORNIA

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WHAT IS A MUTATION?

One of the new words that has come into the breeder's vocabulary of recent years is the word mutation. DeVries first used it in the sense that we have it today. Mutation means change. In the breeder's sense it means a change of type, a sudden birth or creation of a new individual differing from his ancestors, having form or qualities not explainable by considering his ancestors. The word means very much the same as the older word sport or freak. The main difference in modern thought is this: Mutations occur from time to time, some for better and some for worse, but in such manner that they form beginnings of new species. That this may be true these mutations have within them as much potency to transmit their peculiar features as though they had back of them long lines of ancestry bearing similar characteristics. This has not heretofore generally been taught or believed.

Today there is ample evidence of its truth. To mention one example; there is the mule-footed hog. At some time in recent years there was born into the world a pig with the mule foot, or one toe instead of two. And that pig had potency to transmit this peculiarity so that now there is a race of mule-footed hogs, perhaps of no special value, but yet serving well to illustrate an important truth. So in each breeding herd, there is possibility of birth of some individual distinctly better (or worse) in some form or feature than any ancestry that ever walked, and with the new understanding of the law of mutations the breeder may hope to fix that peculiar feature, to perpetuate it forever. And here comes in the other thing most essential to know, the law of variation in cross-breeding, the law of Mendel. It is the fact of the acceptance of the theory of mutations by one class of students of breeding problems and its rejection by the rest that make the irreconcilable differences of opinion on breeding matters, as illustrated in the discussions that arise from time to time. Many trained scientists are studying this theory now and seeking evidences as to whether it is or is not a law, with constantly increasing volume of evidence that it is. Belief in this law does not in the least affect the old established theories that "like produces like" (with some important exceptions). It does not in the least relieve a man from his duty to provide the best possible males for his females, and the best possible females to mate with his males. But it explains and illumines some things that have been

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Berkeley, California

mysterious; it hints whence came the smooth heads of the double standard Polled Durhams; it was first of all a mutation; it tells how there may be pure-bred polled Herefords; it explains the families of six-fingered men and the cats without tails. In other words, it shows how evolution may proceed by leaps and bounds instead of by imperceptible slow gradations.

CARE OF YOUNG PIGS.

Often from overfeeding the sow on perhaps a too-rich ration, one will find some of the young pigs scouring. This is known as the white scours, and if not checked at once becomes dangerous. If the feed of the sow is reduced and a tablespoonful of soda given once daily in her feed, the trouble may be stopped.

One will also once in a while find a large litter of pigs with sore noses and sores along the sides of their faces, and wonder what causes it. If you will watch the pigs when they are nursing, you will see that several of them are fighting for the same teat. You should now catch each pig and with a small pair of tweezers pull each of the four small tusks, which you will find are as sharp as needles, and these are what makes the sores along the sides of the face and nose. This will stop this trouble. After the pigs grow older and become about four or more months old, one may find some of them "humped up," coughing and choking. This is a sign of what is known as thread worm, and they have accumulated in the throat, causing the cough. There is another troublesome worm, known as the stomach worm, which is from six to ten inches long, about the size of a pencil, and tapering to a point at each end. These, when they become numerous, are a source of great unthriftiness, and sometimes cause death. Both of the above species of worms may be expelled by proper treatment, and may be entirely prevented. For prevention, feed any good vermifuge. Use some of the various kinds of "hog dips" by taking about one quart of the crude dip or disinfectant and putting it in a barrel of slop; this is a sure preventative and a cure. Spirits of turpentine in doses of a spoonful in each daily feed will also prevent or cure the trouble. Charcoal is also a most excellent thing for this and for aid in the digestion of pigs that are heavily fed on grain.

Another great pest one sometimes has to contest with in growing pigs is a little black or slate-colored blood-sucker known as the "hog louse," and when once this pest gets into a herd it requires patience and continued care to get rid of them. They multiply very fast and a pig will soon be covered with them, and he cannot thrive, and is constantly rubbing. One may first find this louse by looking inside the ears of a hog or pig. This is where they are first found; then they may be seen along the back, running as fast as they please. They accumulate in the wrinkles of the skin between the legs, back of the front legs, about the base of the ear and inside the ear. They lay a little yellow egg or nit, which adheres to the hair and one often first sees the trouble from this nit before he is aware that his animals are infested.

If one is growing hogs for the market they should be kept growing as rapidly as possible, because the first one hundred pounds can be put on for about half what the second can and the faster they are made to grow the cheaper it will be. To get the best results one should have good pasture, which with liberal grain feeding one can get his pigs off to market at any time after they are seven to eight months old, and should be good to top any market.

Many farmers in growing hogs for market make the mistake of not feeding well enough and by having litters come so late that their animals are not ready for market until every one else has lots ready, and the consequence is that prices break and the market is overstocked. Better try to get your hogs ready a little ahead of the others and you will be able to ship when the market is better. If one is breeding for sale to others as breeders, you of course, would have to have pigs farrowed every month in the year, except, possibly December and January, that you may have animals of the proper age to suit orders.

Give close attention to your herd at all times. It will pay you to do so and pay well. It is certain that there is no adjunct in farming that brings better returns for the amount invested than breeding well-bred hogs, either for the general market or for breeding purposes.

For Wooden Sole Boots and Shoes see O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

CROSSES.

The idea seems to be quite prevalent that crosses make better animals than pure-breds. It is frequently argued that as Berkshires and Poland-Chinas are each good, a cross will be better than either. The crossing of two pure-bred animals of different breeds often gives pigs which are fine animals, have good forms, and will mature very quickly and satisfactorily. When a litter of pigs is to be raised exclusively for slaughter, such crossing is not objectionable, and many careful hog raisers think it the better practice; but the pigs from such crosses, however good they may be are of little value as breeders. The pure-bred ancestors on both sides have been developed toward certain definite but different ideals. In the first cross there seems to be a blending of the two types and the results are often very satisfactory, but the offspring of these crosses are almost sure to show all the weakness and defects of both lines of ancestors as well as many of their own. Breeding from crosses, even though the individual animal may be of good quality is rarely satisfactory or profitable.

Farmers, avail yourselves of the present demand for good horses, produce the kind of a horse that readily sells for a good price.

A pump of the greatest efficiency is P. K. Wood's Improved Deep Well Propeller. This pump has had many years' practical test by irrigators. Where it is necessary to raise water from great depth and under adverse conditions it has succeeded in lifting water with a far less expenditure of power than many pumps but recently invented. Mr. Wood, the inventor and patentee, has made one or more improvements, such as ball bearings and new screw guides, which have added still greater efficiency to this economical pump. Mr. Wood is now in communication with irrigators in Mexico with an idea of installing plants there; also is in correspondence with parties in European countries who are anticipating the use of his peculiar and effective style of pump. A card to Mr. Wood, at 702 N. Main stret, Los Angeles, will bring full description and catalog of these pumps.

Profit in the Poultry Yard

BY MRS. A. BASLEY, HOLLYWOOD, CAL.

MILK, SKIM-MILK AND BUTTERMILK.

The accompanying letter is so interesting that instead of relegating it to the question box I will discuss it in full, takng it as the text for our weekly talk.

Santa Fe Springs, Cal., 6-1, 06

Mrs. A. Basley,
Hollywood, Cal.

Dear Madam:—I notice on page 499 of last week's Cultivator an article "Early-laying Pullets," in which a Minnesota pullet began laying at four months and eleven days, while a Pennsylvania pullet began at three months and twenty-six days. My first hatch of about 180 chicks, Jan. 3rd, and the balance of 351 on Jan. 10th, arrived at the broiler period with 347 of the 351 alive (one killed by accident, one got lost outside the pen and died from cold, the other two I killed because they took bowel trouble.) On May 4th I found two small eggs in one of the coops, one of which must have been laid the day or day before they were four months old. I am now getting from 14 to 16 eggs per day from them, and the oldest of them lack three days of being five months old. This may sound like a "fish story," but any one doubting the same can find proof of my statements by interviewing my near neighbors who know the facts as set forth above.

Now I wish to get some information through the columns of the Cultivator:

1st. The analysis of skimmed milk.
2nd. The analysis of whey.
3rd. The analysis of the curd.

I let skimmed milk stand or I cook it, feeding only the cheese or curd, throwing away the whey, but am wondering if I am not throwing away good egg and flesh producing material.

4th. In what number of the Cultivator was the formula given for making "United States Whitewash?"

Hoping for the information in earliest number of the Cultivator, I remain, very respectifully

John A. Bevington.

There is one omission in it, we are not informed what breed of chickens is making such phenomenal layers.

I most heartily congratulate their owner on his success, not only in the bringing chickens, to maturity so quickly, but in his success in raising practically every chick to broiler size, in so large a number. This shows that his care of the chicks must be about right or they would not do as well, nor mature as early.

I have had White Rocks that laid at four months and fifteen days, those were hatched in February, but with White Rocks I never encouraged early laying because I wanted large frame in my fowls. I wanted a good market fowl as well as a marvellous layer. I kept my large hens as my breeders and in order to get them, I discouraged early laying and to prevent my pullets from commencing to lay until I thought them large enough and thoroughly matured, I moved them every two weeks to different quarters.

I did not want to master the laying

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The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the **GOLD MEDAL** at the St. Louis World's Fair for greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1604.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A FILCHER, Commissioner.

And Now Comes New Reward for Merit:

Read the following telegram received from the Lewis & Clark Exposition at Portland:

"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

PETALUMA INCUBATOR CO.

Main Office and Factory, Petaluma, Cal., Box F. Los Angeles, 505 South Main Street
San Francisco Office and Salesroom, 33 Market St.

for my object was not eggs for market it was eggs lots of eggs too, for breeding purposes. I fed for that and for fertility, and for any one that wants large fowls, I think my way of handling the White Plymouth Rocks was good, for it gave the large vigorous frame that I wanted.

The Leghorns of course I kept for eggs only, they proved for me grand layers the first year and my plan was just the contrary to the way I managed the White Rocks, I encouraged the timid, nervous little beauties to start in with their family making at as early an age as possible, preparing comfortable nests ahead of time and offering every inducement to them to lay. For I had found with Leghorns that the first years laying was the best, and I could only keep with advantage to my pocketbook the best, highest scoring, largest and handsomest over the second year.

I found then, for I had not then attempted to hasten the moult, that the pullets laid, when hatched early, magnificently all through the fall and the first winter, then they stopped laying in July and did not lay again till January, nearly six months moulting and resting. Now I do not say all Leghorns will do this, but I had beauties. In those days I had not studied the balanced ration. so when the pullets had finished laying I fattened and sold or ate them. I did not want to keep over as breeders.

With White Rocks it was different, for they even lay whilst they are moulting. In fact, when I try to assist the moult, it often seems to assist them to lay more eggs, and I find that my White Rocks lay at two years of age very nearly if not quite as many eggs as they do in their pullet year.

I am telling my own experiences in this matter. Others may have very different, but I made a success of the business and discussing this subject may help others out.

Milk I have found excellent in every form for poultry, and I was rather amused at a clipping sent me by a lady who is using milk successfully with her fowls. The clipping was from an Eastern poultry magazine and read, never feed milk to laying hens, it will make them too fat; feed milk to the hogs. Good for the hogs but excellent for hens (Mrs. D. B.) and don't change your plans on the advice of this clipping.

The analysis and computed value of milk from "Poultry-craft" and the government bulletins is as follows in percentages:

Gross contents percentages: whole milk, water, 87.2; dry matter, 12.8; composition of dry matter protein, 3.5; carbo-hydrates, 4.8; fat, 3.7; nutritive value, 1.04.

Skim milk—water, 90.4; dry matter, 9.6; composition of dry matter, protein, 3.1; carbo-hydrates, 4.7; fat, 0.8; nutritive value, 1.2.

Butter milk—water, 90.1; dry matter, 9.9; composition of dry matter, protein, 3.9; carbo-hydrates,4.0; fat, 1.0; nutritive value, 1.16.

Curd—Water, 72.0; dry matter 28.0; protein, 21.0; carbo-hydrates, 4.45; fat, 1.10.

These analyses I have taken from the government bulletins and from "Poultry-Craft," a most useful text book for poultry keepers.

I cannot find in the books that I now have the analysis of whey, but "Poultry-Craft" says, "Whey is used by many feeders to wet the mash. It contains so little solid matter that the advantage of using it, rather than water, to wet the mash, must be more fancied than real. especially as its solids are principally carbonaceous. If one has it, it will pay to use it, nothing should be wasted. It has not food value enough, however, to make it worth ones while to go to any trouble or expense to get it.

W. B. Anderson of the Indiana Station (Bulletin No. 71) found that skim milk added to the ration. increased the consumption of other food. The greatest average gains were made in the case of such additions. He concluded that skim milk was especially valuable for young chicks in hot, dry weather, and that it is less important when they are older. In later experiments he found (Indiana Station Bulletin No. 76) that with cooler weather and for older chicks the value of skim milk was not lessened. He concludes finally that "milk is most valuable and that by its use one can obtain better results from the other constituents of the ration than otherwise."

In the tenth report of the New York State Station (Geneva) W. P. Wheeler (p 193) says. in speaking of "skim milk for growing chicks:" "An unlimited supply of sweet skim milk can apparently be given to chickens with advantage, but sour milk must be fed with caution. Where sour milk only is available, it is best to coagulate, thoroughly by moderate heating, and feed only the curd. straining out as much whey as possible."

In Bulletin No. 53 of the same station, it is stated that sweet skim milk was fed as profitably to capons as to young chicks and adds, "It is very important that the dishes from which milk is fed should be cleaned often and scalded occasionally."

Personally I have used milk for fowls for many years. I always use sweet skim milk for little chicks, ducks and turkeys. I always use it for fattening fowls, mixing their feed with it. and I give the laying hens and half grown chicks all the milk either sweet or clabber that I can spare them. I have never found it in any way injurious and it certainly promotes laying with my hens.

I prefer giving it to them to drink. I never mix it now with their ration (except for fattening fowls) and I give it to them to drink and scald the vessels more than "occasionally".

Curd is my staple food for turkeys and as now I only feed by the dry method I throw away the whey.

* * *

EDITOR'S QUESTION BOX.

Sick Turkeys. (Mrs. M. D., Anderson, Cal.) I have read your poultry articles with great interest as I am raising some, so I hope you will give me some information about my turkeys. I have twenty little turkeys with two chicken hens; they are now about five weeks old; they have been doing nicely and never were sick until the past week. I have lost four, and on examining them I found their livers all spotted. I did not remove them from the nest till they were 36 hours old; the first day I gave grit and fresh water. then I began feeding chick feed four times a day, and they have a run of 175 acres. The hens don't seem to care very much for them and last week they strayed around the barn most of the time. They have no lice. I use insect powder every week. I have 150 little turkeys running with turkey hens, I feed them the same ration and they are doing fine.

Answer. Your little turkeys have liver complaint, brought on by over feeding or wrong feeding. You had better put your little turkeys if possible under a hen turkey; the chicken hens are not feeding the little turkeys enough green food and too large an amount of grain. I do not like chick feed for little turkeys; there is too much corn in it, and corn ferments in the little turkeys stomachs. If you will notice carefully the mother turkey will eat most of the corn herself out of the chick feed so that when a turkey is the mother the little ones get but little of the corn. Another thing, the turkey mother will not stay by the feed trough or box more than a very few minutes and will then move slowly away calling her young away also, whilst an old chicken hen will fiill herself up and her young also on the feed. For this reason little turkeys do much better with turkey hens.

* * *

BOWEL TROUBLE.

Editor Cultivator:—Can you tell me what to do for my little chicks. When they are hatched and for a week they are nice healthy chicks, and then some take bowel trouble, others die; can't tell what is wrong. They have no lice that I can find. The first flock I fed wheat, the next sweet milk and bread, the next chick food. The old fowls healthy. active and vigorous. The little chicks have a dry place to run.—J. T., Burbank.

Answer. "When in doubt consult nature." The bowel trouble is an indication of taking cold. The chicks are either taking cold from over heating and cooling off, or from cold in some way, or you commence feeding too early; chicks should not be fed until they are 36 hours old.

Sit down and think " am I giving the chicks the conditions they would have under Nature?"

Good air. shade as well as sunshine, fresh. cool, pure water, plenty of green food as well as grains, and animal food also. This can be supplied by milk or hard boiled eggs; it is in the chick feed as dried blood and bone, or beef scrap.

If your old fowl are vigorous and healthy you should raise every chick, barring accident.

Try to keep them close to nature.

* * *

STAGGERS.

Editor Cultivator:—Will you please tell me the cause and cure for chickens that stagger around like something drunk; after a day fall down and apparently lose the use of their legs? As long as they are fed and watered and kept in a dry house they will live for a month or so. Their eyes and comb are bright and are free from lice; are fed bran mash, corn and wheat, with free alfalfa range, plenty of grit and shells. A new case shows up about once a month.—N. E. M., Santa Ana.

The staggers such as your chickens have (you do not mention age or breed) are an affection of the nervous system due to an excessive flow of blood to the head. The cause frequently is from lack of shade, or over heating, lack of pure cool water or anything which would give sunstroke to a human being, chasing by dogs, fright, fighting, etc. The cure is to turn a stream of cold water on the head if they fall down unconscious, give five grains of hypo-sulphate of soda in a little water or a drop of aconite in a teaspoonful of milk; feed light food and plenty of succulent green food and give the fowls shade.

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John P. Boden, 638 Second St., Watsonville, Cal.

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Mrs. F. T. Hungerford, Manager

14 Ribbons at The Last Los Angeles Show.

Indian Runner Ducks' Eggs:—$1.00 per 13, $3.00 per 50, $5.00 per 100. White Minorca and White Wyandotte eggs:—$1.50 per 15, $4.00 per 50, $8.00 per 100. Eggs carefully packed and shipped any where.

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PETALUMA—CHICKEN METROPOLIS.

When one takes a trip to Petaluma, Cal., he is disposed to think that he has reached a new kingdom—a place something like those told about by Gulliver in his travels, says an exchange. Here within a radius of twelve miles is the greatest chicken population in the world, and it seems to the visitor as if there must be a chicken ruler and all the human bipeds were simply for the purpose of catering to the wants of the feathered people.

It is a wonderful population which immediately surrounds the thriving city of Petaluma—a population all dressed in white, with just enough other color to make one more fully realize the vast number of white dresses to be found. This is a busy kingdom, too. The hens are wanted for their eggs alone, and all desire or inclination to set and carry on the duties of motherhood is nipped in the bud, and the would-be mother is told to go ahead and get out a new supply of eggs and let the business of attending to little chicks be looked after by the human servants in the kingdom. A setting hen in and around the city of Petaluma is almost an unknown quantity, and after the hen has served her usefulness as an egg layer she is consigned to the pot, bringing more in the market than she originally cost, while she has paid more than the cost of her keep and care each year.

Within a radius of twelve miles of Petaluma there are seven and a half million chickens. The night after a person takes a trip through this chicken land he is apt to dream of a vast landscape covered with white dots. That is about the way the chickens around Petaluma look. Everywhere you look you see white chickens, and the further you look the more white you see, until just as the horizon comes to your relief the dots seem to merge into a white, snowlike covering. It is all white, for the chicken raisers in and around Petaluma have followed their leader most loyally, and the White Leghorn is the prime favorite.

Nearly half the eggs and poultry consumed in California are supplied by the poultrymen in and around Petaluma, and in addition to this large quantities of eggs and fowls are sent from there to Hawaii and the Philippine Islands.

Take a walk along the streets of Petaluma in any direction and you will be confronted with signs everywhere announcing the fact that the business houses which they adorn cater to a chicken trade. You will see, in addition to the ordinary country-store sign of "Highest prices paid for eggs," signs telling about "poultry feed," "poultry supplies," "poultry medicines," "egg shells bought," "feathers bought," and a lot of similar signs which show that all thoughts in the commercial world have a chicken basis. Even the big factories of the place are built upon a chicken foundation.

The largest factory which builds incubators in the world is at Petaluma, and besides this one there are numerous others devoted to the same industry. In fact, there are more incubator factories in Petaluma than in any other city in the world .

The chickens must be well fed in order to induce them to lay well, and it is estimated that to properly feed a chicken costs $1 a year. That does not sound large when only one chicken is to be considered, but when we figure that there are seven and a half million chickens to be fed it means that it costs in round numbers $7,500,000 every year to feed the chicken population of the Petaluma neighborhood.

It will readily be seen that it takes an enormous quantity of feed of various kinds to keep all these chickens from going hungry. Some of the poultrymen buy their feed in quantities up to 2000 sacks at a single purchase and many of them buy it in carload lots.

The marketing of the poultry products of this territory is no simple matter. A considerable portion of the trade is done direct with San Francisco. Small steamers make daily trips up Petaluma creek from the metropolis, and in addition to these thirty-eight sailing vessels assist in carrying the 500 to 700 cases of eggs which are sent every day.

These cases hold from thirty to to thirty-six dozen eggs each. Besides these cases of eggs the vessels are frequently loaded down to the water line with crates of chickens. Sometimes these loads are so large that they reach from the lower decks to the pilot house.

In addition to these river boats, a railroad connects Petaluma with San Francisco, and this carries thousands of boxes of eggs and crates of chickens in the express car. The bulk of the shipments is made by river, but where it is necessary to hurry goods the trains are brought into play. It costs 10 cents to ship a case of eggs to San Francisco and the case is returned free to the shipper.

In addition to being the largest chicken community in the world, Petaluma has the largest individual chicken ranch in the world. This ranch has on its premises 18,000 laying hens, besides thousands of young chicks in the brooders which are growing up to fill the places made vacant when the old hens are sold off after their third year of usefulness.

CARE OF YOUNG TURKEYS

I am an old turkey raiser. I have raised them twenty years. Experience has taught me many lessons.

So many advocate feeding curd or clabber cheese to young turkeys. I never feed it, for it is not digestible for people or turkeys. I never feed them under thirty six hours after hatching. I use custard, made of milk and eggs. For a flock of seventy little turkeys, I use one-half pint of sweet milk and four or five eggs, stirred together and cooked until the mess crumbles. Feed four or five times a day while small. Have oyster shell, cracked fine, and fresh water always before them. I use a saucer with a tea cup inverted in it, then pour water in the saucer; the turkeys cannot get wet by stepping into the dish.

I sometimes use chicken hens instead of turkey hens for mothers. When I take the mother from the nest I grease her under the wings and on the breast with lard with three or four drops of coal oil in it. Then in eight days I grease again. I watch closely for lice. I sometimes have to grease the litle turkeys when the wing feathers appear. I grease the top of the quill feathers by puhsing the smaller feathers up. I never grease the heads. Where the yellow of the egg is taken into the body or the umbilical cord, or navel I call it, (I do not know what it is called in turkeyology) is a place

$1500

For the above sum, Captain Mitchell of Santa Barbara will sell his poultry business and good will. The outfit consists of 1000 Standard Bred S. C. White Leghorn laying hens and pullets and their fixtures, i. e., Brooders, Houses, Posts, 6 foot "Union Lock" Fence Wire, Etc., Etc.

Sales of eggs for hatching average 14,000 per year at $70 per 1000, and the net income per annum for the last four years has been from $1000 to $1500. For further particulars apply to

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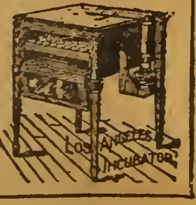

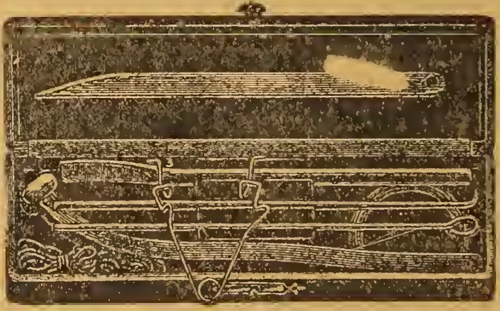

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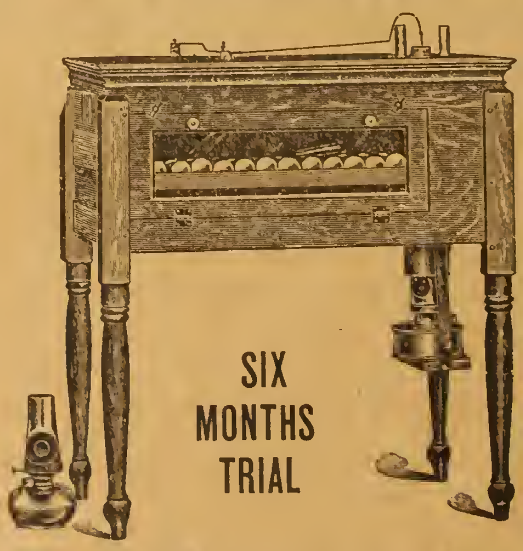

SIX MONTHS TRIAL

Poultry and Eggs Wanted

This sign you will see hanging outside of a merchant's store in nearly every town on the coast and it, in a measure, must convince you that there is money in the poultry business, and the

Chatham Incubators

will assist you in making money. Any responsible person can get a genuine **Chatham** and have SIX NONTHS TO PAY FOR IT—what is the use of you paying out money for an Incubator when you can make it pay over and over again for itself?

I can give you hundreds of testimonials from customers all over the Coast who purchased Chatham Incubators and Brooders last season on our ON TIME PLAN, and are thoroughly satisfied with them. The manufacturers fully guarantee every machine. Write me for our catalogue and some useful hints on poultry raising—It will be mailed to you free.

Geo. W. Foott, Box 2040, Portland, Ore.

where the lice congregate. I never found out until late years that it is a tender place, and I grease there also.

I forgot to say how long I feed the custard. I feed it until the turks are feathered. In fact, if they could talk, they would say, "Give me nothing else." You can see them grow. I feed them wheat mainly. Keep them in a close pen until they get strong and understand their mother's call, which is about a week. Feed three times a day. Put them in a coop at night until they are large enough to fly on to the roost. The first year I raised turkeys I hȧd three to sell in the fall from two turkey hens. Last fall I marketed fifty-two from five turkey hens; kept eight hens and a gobbler to raise from. I have not mastered the art yet. Every year I learn something. I read in one of our farm journals that "turkeys must be fed like cattle when feeding to fatten. Feed corn gradually until on full feed."

I will close these instructions with a turkey tale. One of our neighbors had a flock of turkeys stray off. They had been gone four weeks and were given up as lost. I was at my mother-in-law's in Wellsville. I picked up a paper edited in the town, and my eyes fell on a notice. "Stray Turkeys stating the number.) The owner can get them by paying the cost." I said to my husband, "Go and see if those turkeys are not our neighbor's." He laughed at me, and said: "Do you think they would travel that far?" He went up town and met the man that had the turkeys, and my husband gave a description of the turkeys—so many bronze and so many yellow; and sure enough they were the turkeys. They had traveled thirteen miles. The owner paid the cost and got the turkeys.

DAMP WEATHER AND LICE.

One of our readers complains that the lice and mites, from which her flocks have been comparatively free during the past season, have gained a strong foothold and are making themselves felt in the matter of decreased egg production and slow maturity, delayed molt and some deaths. She says that things have become worse since the fall rains have been falling and that some of the fowls are wheezing, and conditions generally indicate the plague and roup. What can she do to stay the disaster?

Candidly, we are of the opinion that she is simply reaping the harvest of neglect—lice in time of damp weather? Why, yes, it is during such times that they multiply with increased rapidity, seemingly. Fact is, they do not multiply so rapidly during the fall months as during the warm days and nights of summer, but the casual observer is led to believe that the opposite is true because their destructive work is so much more apparent during the cloudy, dismal days of autumn.

The rains make the ground cold and disagreeable to the fowls so that they abandon for the most part the work of dusting themselves, and occupy their time in reaching the irritation with their bills. It is for this reason that few of the vermin are destroyed and as the number increase the vitality of the fowls decrease and presently the whole makeup of the fowl is disarranged and they become subject to colds upon the slightest exposure to draft or rain. In this debilitated condition the rapid advance of colds into symptoms of roup is noticed and fully one-half of our people make the mistake of attempting to cure the disease instead of removing the cause.

Do not be deceived; if your young stock is showing symptoms of roup, look well for lice and mites. Under ordinary conditions the flush of health present in the maturing stock should be capable of withstanding any slight exposure to which it is subjected at this season of the year. It is only when the vitality of the fowls is sapped by body lice and the nocturnal preying of mites that they fall victims to many of the diseases which crop out at this time. When satisfied that lice are responsible for the conditions existing it is high time that you begin an active campaign against the bloodthirsty little pests, and the crusade should last 366 days in the year, ever after.

Would it not be well to take a look into the matter and see how the fowls are spending the nights on the roosts? Take a walk along the roosts some evening and note the restlessness exhibited by the chickens and mark the eccasional rattle from first one and then another. Select one of these detected in the act of wheezing and take it to the lantern-light left safely at a convenient distance from the hen house and see if you do not find sufficient lice on the bird to give you that creepy feeling for the rest of the night. Then and there swear vengeance, not on the chickens, but on the lice, and provide a dust bath in a box set near the windows so that the sun may shine in on it during some portion of the day; obtain some good lice killing agent and go over the flock.

When the work is thoroughly done there will be fewer cases of colds and bowel disorders and the general health of the flock will begin to improve. You can't afford to neglect attending to this matter at once.

NITROGENOUS FEED FOR EGGS

Carbonaceous (corn) feeds are expensive for egg-laying hens. On the other hand, feeds rich in protein cause the eggs to pour down. For example, 100 hens fed on carbonaceous feed—corn predominating—at the Rhode Island station, as against 100 hens fed nitrogenous feed—oil meal used freely—laid only about half as many eggs from the carbonaceous feeds as when given nitrogenous feed. The reason is plain. The 100 hens fed a carbonaceous feed could not make the whites for more than 7908 eggs, in the seven months they were under trial, because the fowls filled themselves with starchy matter to the exclusion of the nitrogenous materials, protein and albumen being needed to make the whites of eggs. Therefore, the pen of 100 hens fed freely on protein and albumen as found in oil meal and meat scraps had all the nitrogenous material needed in building the whites in 17,459 eggs laid by this pen.

It is important to know that the carbonaceous feed returned a profit of only $20.59 for seven months, fed to 100 hens; while the nitrogenous fed pen gave $97.90 profit. Besides, the eggs from the nitrogenous feed were larger and hatched better than did the others. Besides these points, this ration added most weight to the hens that laid the most eggs.

In the face of such facts, sensible people will study to feed poultry such a balanced ration as will insure egg returns and healthy birds, even though they be forced to learn a few hard words. There is no excellence in the poultry yard today without study. Therefore Cultivator readers are invited to put on their thinking caps and investigate carefully every department of poultry culture, with the assurance that we stand ready to assist all who are striving to help themselves.

WHY WE HAVE EGGS WITHIN EGGS.

Instances of eggs within eggs are reported annually in the live stock periodicals, both with poultry and pigeons. Such cases are examples of retarded laying. The oviary channel is, through some unusual exciting state, deficient in lubricating fluid. The one egg, temporarily stopped, is encased in the second, which is thus formed around it. This accounts for the abnormal size of the completed egg, which is eventually evicted, at times with much pain and difficulty, and occasions death not infrequently through egg binding, as it is termed. The condition may be brought about by too much fat forming element in the fowl's dietary—Indian corn, for example, as a sole food—or in a measure may be constitutional and confined to an individual specimen or even strain of birds. The inner egg is often yokeless, though not invariably so.

Soft shelled eggs are ofted caused by an over-fat condition of the hen previous to starting to lay. Oats for the main part of the whole grain ration and cut clover for the bulk of the soft feed will have a strong tendency to prevent the hens becoming too fat, and better egg foods cannot easily be found than oats and clover. Feed plenty of both.

Fresh pure air night and day is the most important thing in poultry keeping.

A safe rule is to feed only what the fowls eat quickly and with a relish.

White Wyandottes and S. C. White Leghorns
Good layers. Trap nests used, Eggs: Wyandottes $1.50 to 2.50 per 15. Leghorns $1.50 per 15.
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Eggs for sale from Prize Winning **Rhode Island Reds.** Send for circular. **W. Frank Greenleaf, Santa Ana,** or **404 H. W. Hellman Building, Los Angeles, Cal.**

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Prize winners at L. A. Show, '06. Eggs from good laying strains. Eggs, special matings, per 15, $2.00. Incubator lots, $6.00 per 100.
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Eggs for hatching from the famous J. W. Miller strain, Freeport, Ill. $1.25 per 15
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BRONZE TURKEYS
Hart's strain. Winners of five firsts at Los Angeles Show, '06, and always winners wherever exhibited. Write for prices.
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Prize-Winning, Egg-Laying, Wealth-Producing Strain.
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Best of Stock. Great Layers.
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S. C. White Leghorns—Heavy layers. Eggs, $1.50 per 15, $5.00 per 100.
Indian Runner Ducks—Males for sale. Eggs, $1.00 per 13, $3.00 per 50, $5.00 per 100.
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Fairview Poultry Yards
Silver Laced Wyandottes—My breeders include 1st prize cockerel, 1st, 2nd and 3rd pullet at the late L. A. show; 1st cockerel at San Diego and 1st hen at L. A., 1905. Eggs for the remainder of the season, $1 per 15.
White Plymouth Rocks—Eggs from choicest pen headed by Fairview Prince, a son of our best laying hen, $1 per 15 for balance of the season.
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"Nothing Just as Good"

World's Chick Feed of To-Day. The only original **Dry Chick Feed.** All others are worthless imitations. **Chamberlain's Perfect Chick Feed** was used exclusively at the great St. Louis World's Fair during the 7 months. This the highest compliment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.

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THE WORLD'S GREATEST EGG PRODUCER.

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SPECIAL PRICES ON TON LOTS.

Distributing Agents: FREDERICK BROWN, San Jose; CHAS. H NEARPASS, San Diego; CHANNEL COMMERCIAL CO., Santa Barbara and Ventura.

General Agriculture

CHILI PEPPER GROWING

If a man wants fair returns from any business he must put his mind and, in fact, his whole self into that business. Even at times when he does exert himself a great deal and does good, honest work, he then quite often fails to get the returns expected. But I am ready to say that if the following rules are carried out precisely as I give them, nine times in ten you will have a paying crop of chiles.

General Points.—Chiles are most successfully grown on deep, rich sandy loam, or sediment soil, which will not bake very rapidly. Chiles should be set in damp soil, and if land should easily bake, you will see the land become hard and will dry out more readily about the young plant. Conditions will thus be such that growth will be very slow.

It has been proven many times that to rotate crops farming would be more profitable. Looking at it from this standpoint it is not wise to grow more than two crops on even the best of soils without fertilizing very liberally. I have never tried commercial fertilizers, but have plowed under cover crops and found them very profitable.

The selecting of seed is a very important factor in growing a good crop of chiles. First, select your plant, a low, bushy vine, full of pods of medium length, such as I have here. A tall bush will not produce as many pods and is more liable to be broken by strong winds when loaded with fruits. Besides, the ends of the pods from a low plant will rest on the ground, and in that position they will prop up the branches, provided you will watch your business and keep crowding a little earth to the row at each cultivation so as to form a ridge, leaving a furrow between every row ready for irrigation.

Varieties.—There are several varieties of chiles, but only two are grown commercially in California. One of these, a very dark, thick-meated, cone-shaped chile, growing from 4 ot 6 inches long, usually known as the Mexican chile, is not grown very extensively, but is slowly gaining ground; while the long red, having pods from 6 to 10 inches long, is the best known.

There is another chile, an extra long pod ranging from 10 to 14 inches. The plant is of a good shape, but it will not produce as many pods, nor will a string of these pods weigh as much as a string of the other varieties when each is cured and ready for the market. When green they are thick and heavy, but after they have gone through the drying process, they are thin and very light. Another feature about these is that they contain very little seed. Just open a pod and find out.

How to Grow Plants.—When your seed pods are gathered have them put on a string and hung up to dry against the south end of a building. Do not put them into the evaporator when hotter than 110 to 115 degrees. They may stand more heat, but don't lay temptation in the way of the seed, for if you tempt it too much only 50 per cent may respond to your wishes, and the other half may keep you guessing a week longer than those dried in the sun; neither will it make so strong a plant. The seed is important: watch it closely.

The seed bed is also important and a peculiar thing to handle. Much havoc has been wrought among the young plants this season. Why? Who knows the reason. Some say a bug is eating the plant. Others say a worm lays them low. But I think it is too much moisture, and it would take a good deal to convince me that I am wrong. The plant simply lies down and dies. In selecting your seed bed take a new location each year.

My idea of a bed is this: Select a location where good drainage may be had. Sandy soil is best, but not so poor that it contains no plant food to nourish the young plants. Plow and level the plot, harrowing or raking with a hand rake, as only a small piece of land is used; sow seed in rows three inches apart, covering one quarter of an inch. On this spread one quarter inch white sand. Start your seed beside a large tree, and you will have fair success. The tree will drain your land. When the young plants begin to die, take a trowel and dig out the affected spots and throw them away. The plants should have five or six leaves on before transplanting commences.

Time for Planting—A number of people planted early this season, as many do every year, and nearly every one lost all or a greater part of their plants. These people planted their best seed, possibly selected, in the first bed and lost it. Then poor seed is taken next time. And what is the result? To plant early and out of doors where wind and weather has access to the plants, the chiles will die and do so in nearly all cases. What is the use of planting early? March 10 to 15 is a good time to sow seed unless one has a hothouse. Wet the soil thoroughly before removing plants to field, as roots are damaged less. They should have five or six leaves before removing. — Allen Knapp.

RIDING TOOLS PAY.

There is an idea abroad among a lot of farmers that a man who has a riding plow is lazy. Better farmers know that this isn't true, but that it is the very best economy for the farmer to preserve himself even though his horses must work a trifle harder, that he may not be worn out with his day's work and unable to plan his work carefully for the next day.

The man who manages a farm has more important business than to exhaust himself, plodding along after a tool over soft cultivated ground, when he can save himself by a slight investment in a riding tool and be able to put a lot more enthusiasm in his work. Because the farmer avoids hard labor for himself is no indication that he is indolent. It is rather an indication that he appreciates the need of a clear brain on farm work.

THE RURAL HOME AND SCHOOL

Continued from first page.

ing in a back district there was a meeting of the grange in the school building, and one man after another looked about him in amazement as he saw what the condition of the schoolhouse was. They decided to leave the interior of the house to the women, and to make a bee of their own number to improve the grounds. One man offered the use of his team, then another volunteered. They painted the building. The land about the school building was drained, and the stone wall was thus permanently protected and repaired. The roots were dug out, the soil turned over, and the yard graded. There was plenty of room reserved for the boys and girls to play, but in front of the building the yard was made very attractive. A walk was laid from the doorway to the steps. A hitching post was set, the flagpole raised and a new rope put in the pulley. A fence was built around the yard to keep out the stray farm animals and to lend neatness to the place. A few strong, young maple trees were carefully planted. not in a row in front, but irregularly massed at the sides. A discussion arose as to whether shrubbery, if planted. would suffer destruction at the hands of the boys. but it proved to be an unnecessary cause of anxiety, for the boys and girls took a hand in the planting, and with a sense of ownership they took as much care of the plants as a gardener would of his most choice varieties.

The woodshed was moved to the rear of the schoolhouse, and the children watched with interest, from day to day, the growth of wild clematis, which they had planted to cover the old shed. Trees and vines were planted about the closets, shielding them from view. These buildings were put into a safe, sanitary condition, thus reducing the possibility of moral and physical injury to the children. After everything was put in order the children occasionally were formed in line by the teacher, and, with baskets in hand, walked over the yard, picking up the refuse.

You cannot divorce the rural school from the farm home. Try as you will, even by means of utter neglect of the school, yet the school and the home are inseparable. One has an effect on the other. Both school and home train the child. The child lives in both. Your responsibility does not stop when your children go to school in the morning. They are your children still.

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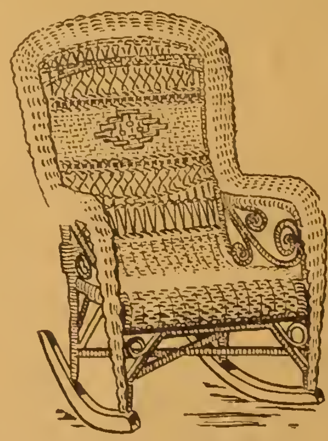

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Queries and Replies

GUINEA EGGS.

Editor Cultivator:—Can you tell me where I can get guinea eggs?—W. O. B., Glendora.

Some breeders should advertise. We do not know who has them for sale.

PRUNING OLIVES.

Editor Cultivator:—Please tell me in your valuable paper when is the best time to prune olive trees, also if it injures them to prune them in the late spring or summer months.—W. E. M., Murrieta.

The usual time to prune olive trees is just after the fruit is picked. However we have seen olive trees pruned from December to August and could see no injury having been done. Only in case the trees had no fruit would we prune in the summer.

WEEVIL IN CORN.

Editor Cultivator:—I have a small bin of shelled corn which has weevils in it. They are eating it up. They started first in a bin of rolled barley and now are in the corn. Can you please tell me what to do for it?—H. C. B., Toluca.

Place a pint of bisulphide of carbon in a pie plate and set in on the top of the grain in the bin and cover over the top with boards and sacks. The object is to stop all openings. After 48 hours there will be no live weevils in your grain.

TREE DISEASE.

Editor Cultivator:—Enclosed I send you a sample of Ben Davis apples which is diseased. The last two years the tops seem to dry up and then the blossoms die. Would you be kind enough as to let me know through your paper if there is any remedy for them, also what is good for curl leaf?—Subscriber, Santa Ana.

Bordeaux mixture, four parts bluestone, four parts freshly slacked lime, both by weight, and 40 gallons of water will cure the fungus on your apple trees and curl leaf on your peach trees. Spray as late as you can before the buds open in the spring. If there is any sign of the disease after the leaves come out give the tree another spraying.

In mixing the spray material put all the lime in half the water (20 gallons) and all the blue stone in the balance, then mix the two. A better spray material is made that way than when mixed in a concentrated form and then diluted.

ROOT KNOT.

Editor Cultivator:—Some time since I wrote you asking about my peach trees and received a very satisfactory answer, for which I thank you very much.

Now I am trying to clean up an orchard for a friend of mine. It has black knot very bad. Prune trees on peach root. We believe they were diseased when at the nursery, as two orchards owned by two men are affected like mine and are of the same stock, put out the same year.

About 90 percent of the orchard is affected; about 50 per cent half way round. Some only two inches or so of bark left, but still alive and bear a good crop—better than the healthy trees. Ground pretty well tended, not many borers. When the knots are dug off the tree looks pretty badly girdled. I have been clearing off knots and putting on good coat of white wash. Trees are 15 years old. Will it pay to try to save the orchard? What can we do for it? I recommend the Cultivator to all. Please answer as soon as convenient. Yours, A. H. S., Campbell, Cal.

When fruit trees are more than half girdled by crown knots it is not worth while to try to do anything for them. Deciduous trees may be badly diseased with these knots and still continue to bear, but the fruit is not of as fine quality as that from a healthy tree. Diseased plants are always under a tree, endeavoring to reproduce their kind. This cannot last long. The badly affected will rot off in a few years or become so weakened at the points where the knots form that heavy winds will break them off. We have not seen a case where a tree with a strip of bark on one side and the balance of the circumference killed with crown knot amounted to anything. Where the knots take less than half the circumference the tree may be much benefitted by cutting out the diseased portions and saturated with a one-pound to ten-gallon solution of blue stone and water. We know of no sure cure or anything that prevent the knots forming.

ANTS IN GARDEN.

Editor Cultivator:—Please tell me the best method of getting rid of ants in garden.—J. G. W., San Jose.

There are a score or more of treatments that seem to be successful with some people. We give four in common use. 1. With a cane or broom-handle or other round stick make a hole (if a large nest, two or three holes) to the depth of a few inches, and pour in a tablespoonful of bisulphide of carbon, filling up the hole thereafter with earth. 2. Spray the entire surface with strong kerosene emulsion, or pour kerosene oil into the hills. 3. Punch a hole. fill with naptha, take the can to a distance of several yards, and ignite the naptha in the holes. 4. Pour in boiling water. We will add a fifth: Look in our advertising columns and note a remedy there recommended, give it a trial, and let us know the result.

FREE SEEDS.

It is strange that in a gift enterprise so meritorious that Congressmen do not change the character of the goods. Let them drop the seed business awhile and send out instead something useful, a patent hay-rake, a typewriter, a clothes-wringer, a husking peg. The government could as consistently run a whole department store as a mere department, and with its well known aim to please endear itself anew to the people.

The decison to retain the old plan was hailed with joy by many clerks strongly attached to their salaries, by tradesmen furnishing the paper bags, by experts who won't let a pea go forth unless it has the symmetry fitting it to be used in little Johnny's pea-gun, and by Congressmen who want to keep in touch with the folks at home.

The mere fact that the money expended for seed distribution is an absolute waste might be considered but economy is a detail, and this is a day of big things. Besides there have been provided costly warehouses and machinery, and Congressmen deprived of the right of pelting their constituents with seeds that the constituents want, just to show themselves in direct touch with the government, would never relinquish the privilege. They have grown so accustomed to it that any motion to assail it strikes them as a furtive blow at the Constitution.

ALFALFA BULLETIN.

Alfalfa seed is so valuable a crop that many would be glad to produce more of it if it were possible. The conditions favoring the production of seed are not well known. As the result of an inquiry throughout the State, the Kansas State Agricultural College Experiment Station has issued Bulletin No. 134, on "The Alfalfa Seed-crop and Seeding Alfalfa." This bulletin will not enable one to produce a crop of alfalfa seed at will, since some of the conditions are beyond our control, but it will be of value to every grower of alfalfa. It may be obtained free by addressing the Agricultural Experiment Station, Manhattan, Kan.

The latest revised catalogue of the Vermont Farm Machinery Co., Bellows Falls, Vt., has been received. Anybody wishing to study the making of one of the best cream separators made should by all means send for a copy. The U. S. Cream Separator has swept the premiums in many a state contest, while its record at the different World's Fair expositions is truly remarkable.

An experiment at the Maryland Station proved that sawdust was the best and cheapest available bedding for cows at that point. Where cows were continuously stabled wheat straw, sawdust and shavings cost respectively $4.15, 40 cents and $4.81 a year.

Geo. H. Croley & Co., before the fire at 512 Sacramento Street, San Francisco, have opened an office at 754 Main street, Petaluma, Calif., and are now able to fill orders for goods promptly.

THE BOSS LADDER

We have been making the Boss Fruit Ladder since 1895, and thousands of them are now in use. They are lighter, stronger and stiffer than any other make. A 10-ft. ladder weighs 25 lbs. so that girls and boys can handle them. Each step is braced with four wire braces. We will ship one or more to any S. P. R. R. Station in California, on receipt of price—30 cents per foot and prepay the freight.

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Household Department

NOTHING TO SAY.

Nothin' to say, my daughter; nothin' at all to say,
Gyrls that's in love, I've noticed, ginerly have their way,
Your mother did afore you, when folks objected to me,
Yit here I am, an' here you air; and yer mother—where is she?
You looks lots like yer mother; purty much same in size,
And about the same complected, and ,favor about the eyes,
Like her, too, about livin' here—because she couldn't stay,
It'll most seem like you was dead—like her; but I hain't got nothin' to say.
She left you her little Bible—writ yer name acrost the page—
And left her ear-bobs fer you, if ever you come of age,
I've allus kep' em and guarded 'em, but ef yer goin' away—
Nothin' to say, my daughter; nothin' all all to say.
You don't rikollect her, I reckon? No no, you wasn't a year old then,
And now yer—how old air yer? Why child, not twenty; when?
And yer nex' birthday's in Aprile? And you want to get married that day?
I wisht yer mother was livin'; but I hain't got nothin' to say.
Twenty year; and as good gyrl as parent ever found,
There's a straw ketched onto yer dress there; I'll brush it off, turn 'round.
(Her mother was jes' twenty when us two run away;)
Nothin' to say, my daughter; nothin' at all to say.

—By James Whitcomb Riley.

PRACTICAL HOUSEKEEPING.

Nothing gives zest and interest to housekeeping so much as the intelligent application of principles that saves time and labor. Housework without thought is drudgery; with it there is delight in the accomplishment of those duties that transform housekeeping into home-making.

It is sometimes thought that any one whose cooked products can be eaten knows how to cook; that dishes are well washed when they look clean. It is equivalent to a fine art to do either of these household tasks well; and a woman who knows how is greatly appreciated in her own or in any other family. Girls brought up in ignorance of the practical things that make the home are deprived of a blessing, as well as handicapped for duty.

Pedagogy teaches that intellectual interest is necessary in acquiring knowledge. Terrors of housekeeping vanish, to some extent, when interest asserts itself in domestic life. The future happiness of all concerned depends upon the mental attitude of the worker. Nothing contributes so much to securing this quality as the lively desire to do work in the way that will best secure good results and conserve time and strength.

Do I hear you say, "With so much to do, there is no time to try new methods; the work must be hurried through anyhow?" The housewife is often an all-round, intelligent worker who must perforce crowd into her busy day work belonging to a dozen different professions. This gracious lady who receives her guests with a heartsome welcome is also a capable cook, the exquisite laundress, and the artistic housekeeper.

The most useful life may be made up of these details. The spoke of a wheel is only one stick of wood, the hub a larger piece fashioned to receive the spokes, the tire but an iron band to hold all in place. Without the spokes, the wheel lacks strength; without hub, the very center is lacking; without rim, the wheel has no stability. These domestic trifles are the condition of man's mightiest achievement, or are very possible elements in his defeat. A soggy potato has weighted many a man's soaring ambition. A complaining word, a sour look, a bitter tone, has taken the heart out of a man. Poor coffee has dampened the ardor of many a potential poet. Therefore, a woman cannot reasonably say that housework is mere drudgery, a round of soulless routine, and void of pleasure and interest.

A few years ago the school of domestic life was the home kitchen; the mother was the teacher; the pupils began at an early age and never graduated; the only book was experience with real conditions. Chemical and physical forces worked then in the mixing of ingredients; the influences of fire and water were as great as now; the care of the human system was as much governed by laws as now; but experiment and chance were the controlling elements in a housewife's education. There were good cooks then as now; there were neat and careful housekeepers; there was great devotion to household cares; but these virtues came with great labor and usually without fundamental knowledge.

Gold of Ophir Rose Courtesy Pasadena Star

The work in many homes is governed the same way today, but not so successfully. The simpler life of earlier times has given place to the great unrest of the present day; the cooking is more complex; a complete change has taken place in the methods of furnishing raiment; the art of keeping a clean and sanitary home has grown greater with the perplexity of living, with a larger population, and a greater knowledge of danger.

Without knowledge of these changed conditions and the ability to meet them, there will be much discomfort, much unrest, much that is not satisfying in the domestic world. Untrained maids will fly from kitchen to kitchen; the young wife will weep over her failures and depend upon a brief respite brought from the passing maid, from the reading of cookbooks, and by consultation with older and wiser heads.

With acurate knowledge comes skill in household affairs; with skill comes joy in the work. When this end is attained, interest will hold the maid in her flight and lend a charm to the making and the keeping of a home. Yet a scientific knowledge of household affairs is not altogether sufficient to relieve the domestic difficulties. There is no doubt but that an interest in housework is necessary in order to make it enjoyable, and that interest increases with knowledge and study. However, there is a step higher which must be attained if domestic duties are to be enjoyable. While we advocate making domestic science a part of a woman's education, still her accomplishments in domestic lines are greatly enhanced by culture, refinement, a life with books and with nature. The woman who by reason of her training has a large insight into the bacteria of the kitchen sink, who knows the song of the bird, the home of the insect and who studies the web of the spider, has just so more of the enjoyment of life. She who makes the appointments of a dining-room artistic and attractive, and finds pleasure in doing it, is a greater woman if she knows why she selects a certain madonna for her walls, of if she can paint a landscape to hang there. The music of poems is a desirable accomplishment to the song of the teakettle, the beating of an egg, or the rubbing of the clothes upon the washboard. The eyes may be attracted by the beauties of the landscape at the backdoor, giving somewhat of a zest to the dish washing, or even to the sweeping. Ability to play the piano should make a woman happier when she hears the prattle of little ones calling for attention, or starts the kitchen utensils into a merry hum in preparing a dinner or clearing it away. The four walls of a kitchen are much less monotonous if relieved by an occasional journey; life is broadened by travel.

Housework is called drudgery, but all work is drudgery until softened and relieved by life outside of dreary monotony. One objection on the part of woman to confining her time and thoughts to domestic life has been the desire to take part in occupations which offer seemingly wider experience; but a woman bound to make all that is possible out of her life in the home bids come to her use some knowledge of chemistry, physics, bacteriology, physiology, botany, zoology, art and many other interests. Her field, therefore, is great when she per-

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Azusa. Sept. 28 '05.
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fects her knowledge. Her spiritual aspect toward the work in hand, and her knowledge of principles to be applied, govern to a great extent her enjoyment and usefulness.

Of no little importance is her physicil development. Domestic life calls for large energy, calm nerves, fine physiques. The athlete uses his muscle to develop it. Shall not the housekeeper do the same? Every opportunity for gaining physical strength must be grasped with eagerness, for with the average woman housework fails in its pleasures and possibilities when physical strength has waned. With its failure comes a weakening of nervous energy and a lack of spiritual enjoyment.

Housework expresses the science of living. To woman is entrusted this great field of activity. Other occupations are dependent upon this one; the happiness and ability of men are dependent upon a woman's success in the art of living and of making it possible for others to live. Therefore, the merit waits upon the housekeeper, and we would pay a high tribute to her who studies to make it a science and an art. Regarded as a special education, domestic economy is in its infancy. The safety of the home is now considered to be more dependent on knowledge, refinement, culture than on constant drudgery and too close application to work.

As much muscular energy is used in sweeping, dish-washing and general housework as in tennis or golf, but the state of the mind is different. When a woman introduces into her routine an effort for higher attainment in the art of practical housekeeping, or when the routine is relieved by the enjoyment of pleasure in view—the time to read, an entertainment, an anticipated visit, or music—she sinks the heavy feeling of despair over never-accomplished labor in the anticipation of other things. Then, while she must labor on, may it not be well to sing a song, laugh in the midst of difficulties, enjoy the sunrise and the sunset, and smile at the fortune which made her a housekeeper.

ON THE USE OF PERFUMES.

The girl who is fastidious to the point of observing little niceties is chary in her use of perfumes.

She never indulges in those which come in liquid form, except to put a few drops in the bath water, and those in powdered form she selects with the greatest care and never by any chance those that are at all aggressive.

The moderate use of heavy scents is in most execrable taste. It suggests blowsy hair and cheap imitation jewelry, and is distinctly to be avoided.

It is the Scylla and Charybdis which has wrecked more than one young woman's aspirations, and a habit which, like the habits of smoking and gum chewing, grows with indulgence.

Frequently, perhaps generally the abuse is the outgrowth of a liking for a delicate perfume, which being persistently gratified, increases, dulling the senses until stronger and stronger scents are required to satisfy, and the wearer is unconscious of the distasteful effects upon others.

So, the better way is to dispense altogether with the liquid perfumes and substitute sachets, as many as you will as long as they are the delicate odors. Fasten them here and there in the gown or in the wrap, and scatter them about the trunk, even with the trunk sachets.

HUSBAND IN HOUSEWORK.

Every once in a while there comes a complaint from the men that their wives are not thoroughly competent housekeepers. They have no patience with a woman if she does not know how to perform all the duties about the house, but it never seems to occur to them that they have any household duties. They feel aggrieved if asked to do anything outside of their regular business, and moan if asked to bring up a hodful of coal, mend a window fastener, or put a washer on a faucet. Sometimes it is indolence that makes them shirk these tasks, but a great many times it is incompetency. A man should know how to perform a simple piece of carpentery, a little job in plumbing, just as well as his wife should know how to make bread or set the table. There is no reason why he should not be handy about the house instead of being obliged to call in paid workmen everytime there is a little something out of gear. There are some men who are not able to bring down the screen doors and hang them, who do not know how to put up a clothes line, who do not know how to fasten the hooks for the hammock, and are utterly at sea when it comes to mending anything. As for helping their wives in their domestic duties, they think themselves insulted if asked to do such a thing. Yet there is no reason why a man should not aid his wife in her hurry to do up her work in order to go out with him, by clearing off the table, helping at washing the dishes, and even paring the potatoes. Really great men are not afraid to aid their wives in the simplest duties. I have seen a man who holds a position of great responsibility get up from the supper table and quietly begin to remove the dishes so that his wife will not have to flurry to get ready for an evening's entertainment. I have seen a dignified, thoughtful business man always step forward, when his wife was doing some heavy piece of work, with the words: "Here, let me do that." These men did not seem to think thev had taken anything from their dignity, because they were willing to turn their hand to household duties. They simply saw there was a way in which they could help, and proceeded to give their services.—Motherhood.

FATHER'S TIME.

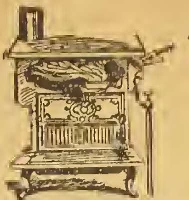
"Oh, no, I cannot go with you after dinner tonight, because that is father's time, and we always have so much fun then."

That is what I heard a little maiden say to her school friend, who had invited her to go somewhere with her.

"Father's time." I wondered what that meant, and so I asked the little maiden. "What is 'father's time'?"

"Oh," said she, "'father's time' is right after dinner at night, an hour or so before we go to bed. Father makes lots of pleasure for us then, and it is the only time we can see him, except in the early morning, and that is for such a short while. Father never goes away at that time, neither do we; we give that hour to him, and he gives it to us. It is our 'together hour.' Oh, he is such a good, dear father!"

What a testimonial to the high standard of fatherhood was the speech of this little girl! Away all day, immersed in business cares, the father could give no time to his children except the hour before their bedtime. With what happy, light hearts those little ones kissed him good night when bedtime came, and with what smiling faces they went to sleep to dream beautiful dreams of father love!—Evangelist.



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Chicago	$33.00	Kansas City & Leavenworth	$25.00
St. Louis	30.00	St. Joseph & Atchison	25.00
Galveston	26.45	Council Bluffs & Omaha	25.00
Dallas, Houston and Fort Worth			25.00
Nearly all points in Kansas, Oklahoma and Indian Territory			25.00

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Santa Fe Agents in California will take deposits of money to cover price of tickets, which will be promptly furnished to passengers at any point from which these rates are in effect.

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BEAUTIFUL SCENERY along the line through California, Nevada and Utah. 'Tis not entirely a desert region. You will be surprised when you see the reality.

SEE SALT LAKE.—No extra expense is necessary to stop over a day at Salt Lake City. There's much to interest you in the old Mormon City.

THROUGH SLEEPERS are run on both Salt Lake Route trains from Los Angeles. THE LOS ANGELES LIMITED with standard and tourist runs solid though to Chicago via Ogden, Union Pacific and North Western lines. There's nothing finer in train equipment.

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THE OVERLAND carries every day tourist sleepers from Los Angeles to Chicago via D. & R. G. & Burlington Route, to St. Louis via Union Pacific & Wabash Railroads and to St. Louis twice a week via D. & R. G. & Missouri Pacific Railways. There is also every day a Standard Sleeper through to Denver via D. & R. G.

DINING CARS are carried on both THE LOS ANGELES LIMITED and OVERLAND in which meals are served a la carte. You pay for what you want at reasonable prices and the service is the best possible.

EREE CHAIR CARS are run on THE OVERLAND to Salt Lake City connecting with similar cars on other lines there. These cars are very comfortable. Save sleepers expenses if you wish.

EASTERN EXCURSIONS at much reduced rates will be run by the Salt Lake Route this summer. From all stations in California tickets will be sold as follows for round trip:
May 25, 26 and 27—New Haven, Conn. Rate 92.10. Return limit Aug. 31st.
June 6 and 7—Louisville, Ky Rate $75.75. Return limit 90 days.
June 6 and 7, July 2 and 3, August 7, 8 and 9.—Chicago and Duluth $72.50 St. Paul and Minneapolis, $70.00. St. Louis, Memphis and New Orleans, $67.50.
Missouri River points and Fort Worth and Houston, Tex., $60 00.

Also reductions to Atlantic Coast Cities. See Salt Lake Route agents for full particulars and plan your trip to travel over this route either going or returning.

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Samples and price list upon application.

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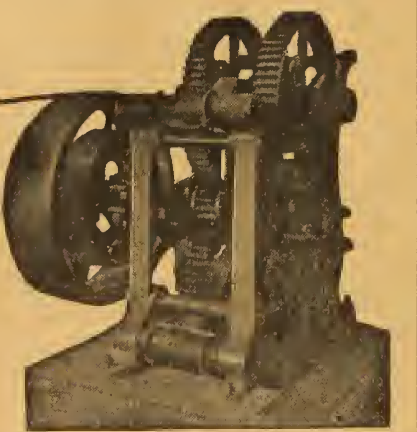
The Pomona Pump



The New Pomona Pump is now being manufactured with machine cut gears and machine cut steel or bronze pinions. The pump fitted with this kind of gearing runs as smooth as a clock and there is absolutely no noise or vibration. The company have recently taken contracts for installing their largest sized pump with this class of gearing for the Artesian Belt Water Company of San Dimas. Western Water & Power Company of Glendora and other large irrigation companies. They are required to furnish these pumps with cylinders up to 12 inches in diameter and 72 stroke which has capacity of over 60 Miner's inches of water. The valves are made entirely of phosph r bronze with ground metal taper seats so there is very little obstructiin to the water in passing through them and it is impossible to clog them with sand. These, in connection with machine cut gears, in the pu np head, make a strictly high grade pumping outfit and the best by a long ways of anything on the market today.

This head and valves are both protected by United States patent. Beware of infringing as both manfacturer and user are liable.

The company has recently installed one of their latest improved heads for the Santa Ani a Land Company, a subdivison of the Baldwin Ranch. Below is what the owners have to say about it:

"The new 38 pump you installed for us on our tract on the E. J. (Lucky) Baldwin Ranch is giving us satisfaction in every way. We think we have the very best that money will buy Both as regards to pump, material used and installation. We made an excellent change when we removed the pump we had been using and installed your make"

We have pleased these people and there is no reason why we cannot please you.

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The Produce Markets

Los Angeles Markets.

Los Angeles, June 13, 1906.

Butter.

Business in produce yesterday was chiefly of a routine character, and price changes were only of minor consequence, the general market holding steady and displaying no discouraging features.

Local Creamery, per roll	.45
Valley Creamery, fancy	.42-45
Coast, Fancy	.40@42½
Coast, Choice	.37½@40
Fancy Eastern Cubes	.24
Cooking	.18

Cheese.

Cal. 3-℔. hand	.18
Cal. Young America	.17
California Anchor, Large	.16
Northern	.13-14
Domestic Swiss	.20
Imported do	.28

Eggs and Poultry.

Eggs, fresh ranch	.23
Northern candled	.19

There is more difference between prices to producers of poultry and to the retailers of poultry than in most other lines. The following are average prices which dealers pay to producers for live weight:

Hens, per ℔	.12
Young roosters, per ℔	.16
Fryers	.16
Broilers, per ℔	.16
Old Roosters	.8
Turkeys	.17-19
Geese	.11
Ducks	.11

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock:

Hogs, 200 ℔	.6
Prime Steers	.4
Cows	.3
Calves, per ℔	.4½
Sheep, ewes, per head	.4.25
Lambs, per head	.3.25
Wethers	.4.75

Potatoes.

Burbanks, fancy	.1.35-1.50
Oregon	.1.35-1.50
Highland	.1.25-1.35

Sweet Potatoes.

White	.$4.00

Vegetables.

Silver Skins	.1.50
Bermuda	.2.50
Garlic	.8@10
Wax Beans	.4@5
Rhubarb, per box	.75@1.00
Parsnips, per doz	.35
Cauliflower, per doz	.85
Asparagus	.6@7
Lettuce, per dozen	.10@15
Bell Peppers	.15@18
Chili Peppers, Green	.15
Chili, dried	.20
Cucumbers, per doz	.30@75
Radishes, per doz	.15
String Beans	.2@3
Beets	.40
Green Onions, doz. bunches	.25@35
Carrots, doz. bunches	.25@35
Peas, per lb	.2@3
Turnips, doz bunches	.25@30
Celery, per doz	.45@60

Citrus Fruits

Lemons, Standard	1.25@1.50
Lemons, Choice	2.50@2.75
Lemons, Fancy	$3.00@3.50
Navels, Choice	$3.00
Navels, Fancy	3.25@3.50
Grapefruit	$3.50@4.00
Grapefruit, seeds	$2.50

Fresh Fruits.

Apples are very scarce and of indifferent quality.

Missouri Pippins	3.25@3.50
N. Y. Pippins	$2.50
Apricots, per 30-℔. box	$1.50@1.75
Strawberries	4@5
Dewberries	5
Bananas, per ℔	5@5½
Cherries, B. Repub	.7@10
Cherries, B. Tar	.8@12
Cherries, White, Royal Anne	.7@8
Logan Berries	.6@8
Raspberries	.8@10

Dried Fruits

Evaporated apples, ch to fy	.15
Apricots	.14
Peaches	.12½
Pears	.13
Plums	.11
Santa Clara Prunes	.4@8½
Smyrna Figs	.15@17

Beans, Dried.

Limas, No. 1	5.00
Pinks, fancy	2.40@2.60
Lady Washington	3.10@3.25
Small White	3.60@3.75
Black Eyes	6.50

Honey.

The honey prices here quoted are those of the Los Angeles Board of Trade, the most responsible authority we have. They are jobbers prices, that is, prices at which the jobber sells to grocers and others in small lots. The producer can take from this his freight to Los Angeles and one cent per pound for commission and will have left the net price to him.

Honey, extracted, water white, 60-℔ cans	.6
Honey, extracted, white	.5½
Light amber	.5
Comb, water white, 1-℔ frames	.14-15
White	.13
Light amber	.12@12½
Beeswax	.25

Nuts.

Peanuts, Virginia	.6½
Peanuts, California	.5
Walnuts	.13½

Hay.

Barley, No. 1	$15.00@16.00
Barley, No. 2	$10@12.50
Alfalfa, local	$13.00@14.00
Plain Oat Hay, No. 1	$17.00
Plain Oat Hay, No. 2	$13.00

Grain.

Purchasing prices f. o. b., Los Angeles, are:

Wheat	1.25@1 37½
Barley	1.20@1.22½
Corn	1.22 @1.24
Rolled Barley	1.40
Bran	1.20
Feed Corn Meal	1.45
Shorts	1.45
Wheat, per cwt	1.50@1.65
Cracked Corn	1.45
Oil Cake Meal	2.50
Cocoanut Meal	1.50

San Francisco Markets.

San Francisco, June 13, 1906.

Butter.

BUTTER—Fresh California, extra, 18c; firsts, 17-17½c; seconds, 16-16½c; packing stock, firsts, 15-16; seconds, 14c.

Cheese.

CHEESE—New, California, 10c; firsts, 9½c; Young America, fancy, 11c; Eastern, New York fancy, 16¼-17c; Western, new, 15c.

Eggs.

EGGS—Fresh California selected, 20c; firsts, 19-19½c; seconds, 18-18½c.

Poultry.

POULTRY—Old roosters, per doz., $3.50-4.50; young roosters, $5-7; fryers, $3.50-4.50; broilers, $2.50-3.50; hens, small, $4-4.50; large, $5-6; live turkeys, per ℔, nominal; dressed turkeys, nominal; ducks, old, nominal; young, nominal; geese, per pair, nominal; goslings, nominal; pigeons, per doz., $1; young, $1.25-1.50.

GAME—Hare, $1.25-1.50 per doz.; rabbits, $1.50-2.

Fresh Fruits.

The leading fruits now in market sold yesterday at the following prices: Strawberries, per chest, $5-8 for large varieties and $10-13 for Longworths; apples, $1.50-2.25 per box; cherries, black varieties, 60-$1 per drawer; white, 50-80c per drawer; cherries, in bulk, black, 6-10c per ℔; white, 5-8c; gooseberries, 50-75c per drawer; oranges, Navels, $2.25-3 per box, with a few second grade at $2 per box; lemons, $1.50-2.75 per box; Mexican limes, $3.50-5 per box; bananas, 75c-$1.75 per bunch; pineapples, $2-3.50 per dozen; currants, $4-6 per chest; Loganberries, per chest, $3.50-4.50; cherry plums, per drawer, 40-50c; peaches, 50c-$1; apricots, 90c-$1.25 for large boxes and 60-75c for small; blackberries, per chest, $5-8; raspberries, per chest, $7-10.

Vegetables.

Dealers sold vegetables yesterday at the following prices: Asparagus, $1.25-$2 for small and $2.25-3 for large box; green peas, 85c-$1.25 per sack; rhubarb, 50-70c per box for small and 75c-$1 for large; string beans, 2-4c per ℔; tomatoes, 75c-$1.25 per box; potatoes, new, 1-1¼c per ℔; old Rivers, 75c-$1.10 per sack; Oregon, old, 67-0c9; new crop, $1-1.50; Coos Bay, $1-1.15 per sack; onions, new, 70-85c per sack; boxes, 25-50c; Oregon,, $2-2.50 per cental, as to quality; Australian, $3.50-4; cucumbers, 85c-$1.35 per box; green corn, per dozen, 15-20c.

Live Stock Market.

CATTLE—No. 1 steers, 6½-7c; second quality, 6-6½; third quality, 5½-6c; No. 1 cows and heifers, 5½-6c; second quality, 5-5½c; third quality, 4-5c; thin cows and heifers, 3-4c; bulls and stags, 2-3c. Prices for all descriptions less 50 per cent for shrinkage.

CALVES—Light, per ℔, 4¼-4¾c, gross weight; medium, 3½-4c; heavy, 3-3½c.

SHEEP—Per ℔: Wethers, No. 1, 4½-5c, gross weight; ewes, No. 1, 4-4½c, gross weight.

LAMBS—Per ℔, yearlings, 4½-5c.

HOGS—Per ℔: Hard grain fed, weighing alive, 80 to 130 lbs., 6c; 130 to 150 lbs., 6½c; 250 to 350 lbs., 6c; rough heavy, 4-5c; common, 3½-4c.

Flour and Grain.

FLOUR—Net cash: Family Extra, $4.70-5.10 per barrel; Bakers' Extra, $4.40-4.75 per barrel; Oregon and Washington, $3.50-4.

WHEAT—No. 1 shipping, per cental, $1.30-1.32½; inferior grades, $1.25-1.27½; white milling, good to choice, $1.32-1.37½, with fancy Bluestem, $1.40-1.42½.

BARLEY—No. 1 feed, $1.07½-1.08¾; common to fair, $1-1.05; brewing, nominal.

OATS—White, $1.50-1.75; red, $1.35-1.70, according to quality; black, nominal.

RYE—$1.47½-1.55 per cental.

CORN—Small round yellow, $1.55-1.65; western, mixed, $1.32½; yellow, $1.30-1.37½; white, $1.35-1.40 per cental.

Hay and Feedstuffs.

HAY—Per ton, choice wheat, $13-18; wheat and oat, $12-16; oat, $10-15; barley, nominal; alfalfa, $10-12; new first crop, $6-8; stock, $7-7.50.

STRAW—Per bale, 35-60c.

FEED—Mixed feed, per ton, $24-25; calfalfa meal; $23.50; carload lots, $22; mealfalfa, per ton, $23.50; carload lots, $22.

BRAN—Per ton, $19-21.

MIDDLINGS—Per ton, $27-30.

GROUND BARLEY—Per ton, $24-26.

FEED CORN MEAL—Choice grades, per ton, $28-29.

CRACKED CORN—Choice stock, per ton, $29-30.

OILCAKE MEAL—Mill rates in 5-ton lots—$37.50; jobbing, $38-38.50.

COCOANUT CAKE—In lots of 10 tons, $23; 5 tons, $23.50; less quantity, $24. Prices are mill rates and are subject to change without notice.

Beans and Seeds.

BEANS—Prices per ctl: Large white, $2.40-2.60; small do., $3.25-$3.45; pea, nominal; lima, $4.50-4.60; red, $3-4; pink, $1.60-1.85; bayo, $3.75-4; blackeyes, $5.50-5.65; red kidneys, $3.5013.75; horse beans, nominal.

SEEDS—Brown mustard, $4.50-4.75; yellow mustard, $3.50-3.75; flaxseed, $2.50-3; canary, 6¼-6½; alfalfa, 13c; rape, 2½-3; timothy, 5c; hemp, 5½c per ℔; millet, 3-3¼c.

DRIED PEAS—Niles, $1.75-1.85; green peas, $2.50-2.75.

Prunes firm, owing to light supplies, but spot demand is light. Quotations range from 7⅛c to 8¾c, according to grade.

Apricots more or less new on spot offerings for future shipment are very light; choice, 12½; extra choice, 13-13½; fancy, 14-14½.

Peaches unchanged; choice, 11c; extra choice, 11¼-11½; fancy, 11¾-12c; extra fancy, 12c-12½c.

Raisins are quiet and firm. Loose Muscatels, 6 to 6⅝; seeded raisins, 5¼-7¾; London layers, $1.50-1.60. Desirable grades of California crop of 1905 sell at 7-10c per ℔; 1906 crop for future delivery, 8-11c, with occasional sales at 12c.

Hides and Wool.

TALLOW—Per ℔: No. 1, 4½-4¾c; No. 2, 4-4½c; grease, $2-2.25.

HIDES AND SKINS—For round lots prices are as follows:

Wet salted hides—No. 1 sound, per ℔, heavy steers, over 50 ℔s., 13c; medium steers, over 48 lbs., 12c; heavy cows, over 50 lbs., 12c; light hides, 12c; kips, 13c; veal, 13½c; calf, 14c; stags and bulls, 8½c; No. 2 hides, 1c per ℔ less.

Dry hides—Per ℔: No. 1, 22c; No. 2, 20c; dry kip, No. 1, 20c; No. 2, 18c; dry calf, No. 1, 24c; No. 2, 22c.

Horse hides—Salted, large, $3-3.25 each; medium, $2.75 each; small, $2.25 each. Dry—Salted, $2-2.25 each; medium, $1.50-1.75 each.

Sheep pelts—Long wool skins, $1.25-$2 each; medium wool skins, 90c-$1.10 each; short wool skins, 50-75c each; shearlings, 20-40c.

WOOL—Per ℔: Fall clip. San Joaquin and Southern Plains, 9-11c; Southern Mountain, 9-11c; middle and southern counties, free, 12-14c; do., defective, 10-12c; Humbolt and Mendocino, 16-18c.

CITRUS MARKETS

New York, June 12.—Twenty cars were sold at auction here today and the same number yesterday. The same satisfactory scale of prices endures and at this season will certainly not be lowered, the demand exceeding the supply. The market is strong and weather favorable.

WASHINGTON NAVELS.

Blue Globe, ex fy, Riv Ev	$4.45
Sweetheart, fy, do	4.30
Our Pride, ex fy, do	4.00
Eagle Head, ex fy, Lyon Rdland	4.00
Our Pride, ex fy, Riv Ex	3.95
Square, or fy, Riv Ex	3.90
Pet, ex ch, S. A. Ex	3.90
Quail, ex ch, O. C. Ex	3.80
Red Globe, ex ch, Riv. Ex	3.80
Coyote, ch, O. C. Ex	3.75
Eagle, ex ch, Riv. Ex	3.70
Red Star, fy, Worthley & Strong	3.65
Riverside	3.25
Golden std., Riv. Ex	3.50

SEEDLINGS.

Iris, ex fy, D-M Ex	3.80
Blue Globe, ex fy, Riv. Ex	3.55
Violet, ex ch, D-M Ex	3.45
Violet, ex ch, D-M Ex	3.45
Titus Ranch	3.35
Titus Ranch	3.25
Blue Globe, ex fy, Riv. Ex	3.20
Ruth, fy, Rubidoux Frt. Co	3.20
Red Globe, ex ch, Riv. Ex	3.00
El Toreador, std, S.M.G.P. As	2.95
El Toreador, std do	2.85
Red Globe, ex ch, Riv Ex	2.85
White Star, fy, Worthley & Strong	2.30

ST. MICHAELS (wholes.)

Signet, ex fy, O.G.C.As	4.05
Colonel, ex ch, do	3.15
Red Globe, ex ch, Riv Ex	2.95
Yankee Doodle, std, do	2.25

GRAPE FRUITS (wholes.)

Magnolia, ex fy, Worthley & Strong	2.35
Blue Star, fy, do	1.95

ST. MICHAELS (halves.)

Iris, ex fy, D-M Ex	1.75
Blue Globe, ex fy, Riv Ex	1.55
Violet, ex ch, D-M Ex	1.50
Quail, ex ch, O. C. Ex	1.50

BLOODS (wholes.)

Colonels, ex ch, O. G. C. Assn	3.60
Lilac, ch, CCU, Pomona	3.40

BLOODS (halves.)

Colonel, ex fy, O. G. C. Assn	1.70
Quail, ex ch, O-C Ex	1.55

SWEETS.

Blue Globe, ex fy, Riv Ex	3.85
Iris, ex fy, D-M Ex	3.85
Independent, Highlands	3.75
Fountain, ch, Moffatt Bros	3.55
Independent, Highlands	3.50
Violet, ex ch, D-M Ex	3.40
Jasmine, ch, D-M Ex	3.40
Santafe, std., Moflatt Bros	3.40
Jasmine, ch, D-M Ex	3.15
Lilac, ch, CCU, Pomona	3.15
California Beauty, ex fy, W. & S.	2.85
Thistle	2.00
Yankee Doodle, std, Riv Ex	1.95

GRAPE FRUIT (halves.)

Blue Globe, ex fy, Riv Ex	2.35
Magnolia, ex fy, W. & S.	2.30
Sweetheart, fy, Riv Ex	1.80

VALENCIAS.

Thistle	2.30

LEMONS.

Independents, Highlands	4.25

Boston, June 11.—Nine cars of Navels, two cars of St. Michaels, two cars of lemons, two mixed cars and one car of Valencias were sold at auction here today. Weather favorable. The market is steady and promises well.

WASHINGTON NAVELS.

Volunteers, ch, S. A. Ex	$4.00
Square, fy, Riv. Ex	4.00
Blue Globe, xfy, Riv Ex	3.95
Quail, xc, O. C. Ex	3.90
Square, fy Riv Ex	3.75
Quail, xc, O. C. Ex	3.70
Stork, xc, S. A. Ex	3.65
Parrott, xc, S. A. Ex	3.60
Golden, st, Riv Ex	3.55
Golden, st, Riv Ex	3.45
Old Baldy, ch. CCU, Ontario	3.40
Partridge, xc, CCU, Upland	2.95
Seal, Calif., st, CCU, Upland	2.70

LEMONS.

Southland Beauties, fy, Q. C. Ex.	4.80
Lacolina, ch, Triolo	4.40
Lacolina, ch, Triolo	4.70
Pride of Lakeside, fy	4.65
Pride of Lakeside, ch	4.00
Leader, xc, Q. C. Ex	3.80

BLOODS.

Rey, xfy, S. T. Ex	3.85
Tunnel, ch, S. T. Ex	3.55

MEDITERRANEAN SWEETS.

Rey, xfy, S. A. Ex	4.15
Tunnel, ch, S. T. Ex	3.70

SEEDLINGS.

Blue Globe, xfy, Riv Ex	4.40
Rosmoyne, xc, CCU, Glendale	3.35

ST. MICHAELS.

Cleghorn, xfy	4.20
Rossmoyne, xc, CCU, Glendale.	3.05
Cleghorn, fy	3.75

ST. MICHAELS (halves.)

Rossmoyne, xc, CCU, Glendale.	1.35

VALENCIAS.

Bear and Eagle, fy, Tulare Co. Ex	4.55

GRAPEFRUIT.

Cleghorn, xfy (wholes)	3.05
Blue Globe, xfy, Riv Ex. (halves)	1.90
Montclaire, fy, CCU, Upland (halves)	85

HIGH PRICED FRUIT.

Fresno, June 12.—Two of the biggest canning concerns opened their plants today, employing about 500 men and women each.

Sharp bidding on the part of the canneries, together with the scarcity of good fruit, has caused prices to soar and the packers are paying an average of $35 a ton for apricots. The quality of the fruit delivered so far is below the average, being small and marked by blight.

The packers and canners are already in the market for peaches and the price of that fruit will be higher this year than ever before.

SAN FRANCISCO SHIPPING.

Import and export trade have shown no great change from normal conditions. The great activity on the water front, so characteristic of San Francisco, has maintained its usual proportions. In fact the immense freight carriers of the trans-Pacific lines are loading and unloading an increased tonnage at the busy docks. Sixteen hundred and forty-three tons of silk, tea and rice was the last cargo of the Hongkong Maru. Fifty-three vessels, with cargoes to all parts of the world, sailed from this port a few days ago within forty-eight hours—the largest fleet within ten years past.

COULDN'T LAY EGGS.

Country schoolmaster, who has received a basket of egg as a present, and utilizes the same for arithmetical purposes: "Now, Peter, here are nine eggs in the basket; if I lay nine more beside them how many would that make?" Peter giggles heartily. "What are you laughing at?" Peter giggles on. "If you don't tell me why you are grinning I shall cane you." Peter (struggling with his grin:) "Please, sir, you couldn't lay no eggs if you tried, you couldn't."

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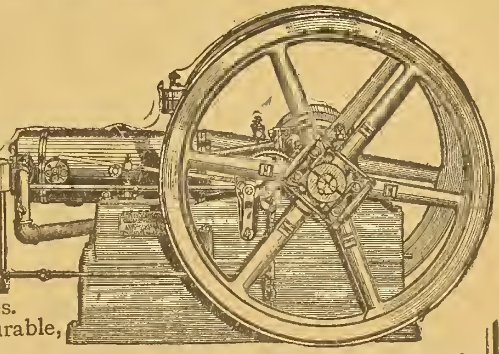

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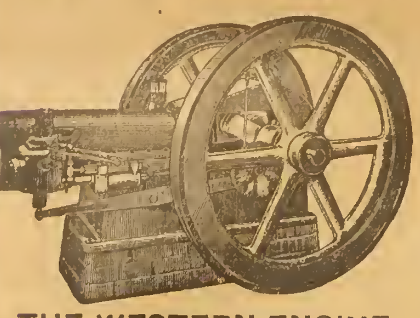

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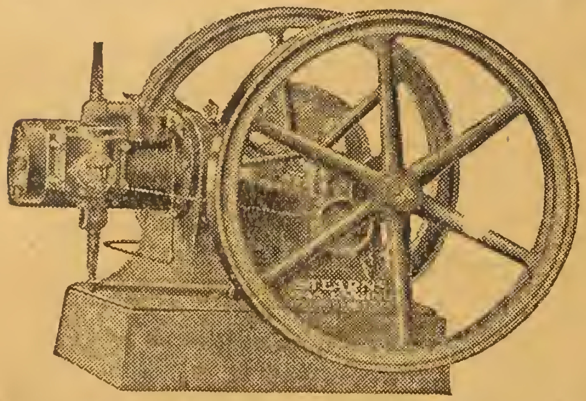

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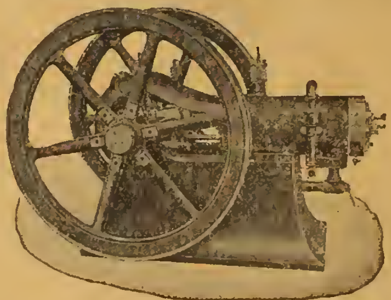

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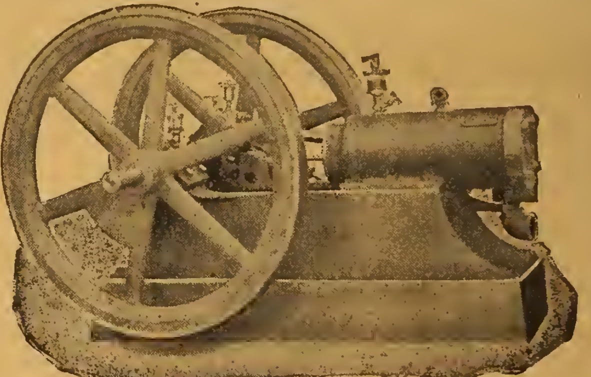

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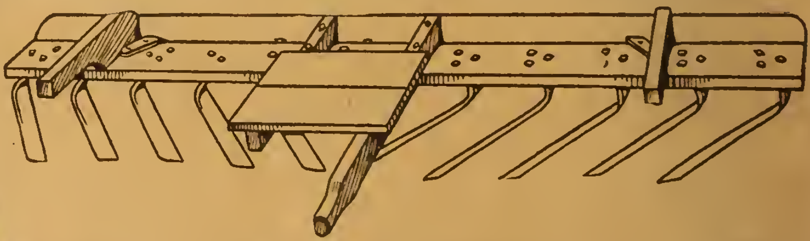

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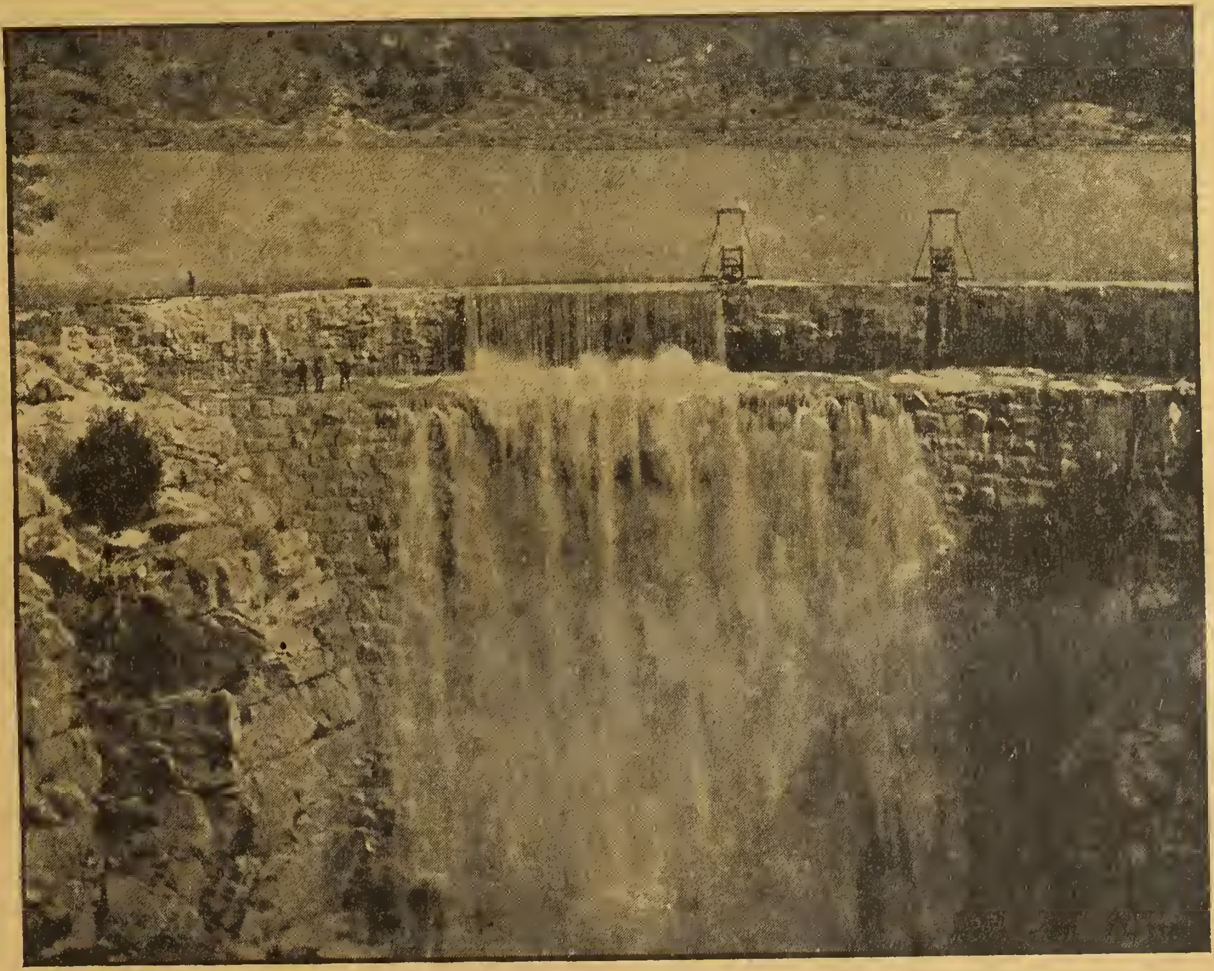
DEVOTED TO AGRICULTURE IN ALL ITS BRANCHES

LOS ANGELES JUNE 21, 1906 SAN FRANCISCO



The Great Hemet Dam.—The great Hemet dam is located 23 miles from Hemet. It is the largest piece of solid masonry in the West, being 250 feet across at the top, 125 feet high, 100 feet thick at the base and 32 feet thick at the top. Nearly 10,000 barrels of imported cement were used in its construction. It closes up a narrow canyon which is the only outlet of the large valley that forms Lake Hemet. During the rains of March, Lake Hemet, a vast body of water, sufficient to irrigate the ten thousand acres of the Hemet Tract for several years, overflowed this dam. Its capacity can easily be doubled.

STANISLAUS COUNTY.

This rich farming section lies in the great San Joaquin Valley, 114 miles south of San Francisco and 90 miles north of Fresno, and is traversed by five lines of railroad. One of them is the main trans-continental road between San Francisco and Los Angeles.

The soil is principally a rich sandy loam; some adobe; no alkali, and will raise almost anything that can be grown in a semi-tropic climate. Oranges ripen for Thanksgiving trade. The mild winters are without snow and very little frost. It has pleasant summers, on account of sea breeze to cool evenings and nights, and cool nights without dew.

Its products are: Fruits—Deciduous and citrus; nuts, grapes and the famous Calimyrna fig. Especially adapted to olives, peaches, apricots, almonds and grapes.

Dairying—At present seventh in state in point of production, having advanced from 12th to seventh in two years. The home of alfalfa, the principal forage plant of the Pacific Coast.

Poultry—Climate and conditions ideal; green feed the year round; San Francisco market near and still depends upon Eastern supply.

Its irrigating water supply is one of the best in the state, and the secretary of the county board of trade states that water costs from 50 cents to $2.50 per acre per year, according to the system used and the extent of the improvements.

The National Wood Pipe Co. has offices at San Francisco, and Los Angeles, California, and Olympia, Washington. They are widely advertising their continuous stave pipe, machine banded and bored pipe for irrigation systems, as well as mining and power plants and city water works. This pipe ranges in diameter from ten inches to ten feet and can be made in any length desired and is so constructed as to stand almost any pressure. It is always built continuous and in place, all staves, bands and other materials being delivered to the pipe line in knock down form. It is especially fitted for power plants and for all water systems where it is desired to deliver a large volume of water. They solicit inquiries and should be addressed at the nearest office. Will cheerfully give information but request that the size of the pipe be stated, the length of pipe line, maximum head or pressure, the amount of water to be delivered, whether it is a gravity or pumping system, and where possible, send plans and profile of system. Their advertisement appears in the Cultivator.

SOLVING A PROBLEM.

The bringing together of the landless man and the manless land is a problem the satisfactory solution of which in America will do more to remedy social evils, and to preserve democratic ideals, than almost anything in the domain of economics; and the chief obstacle in the way of such solution is the greed of the big landholder and the speculator.

The Temple Pump Co., one of the oldest engine manufacturers of Chicago, has recently opened a temporary branch in Oakland with Mr. David Rutherford agent in charge. They manufacture either portable, stationary or traction; 5, 7, 10 and 15 horse power in stock. This company is very proud that it is their fifty-third year of manufacturing. Send for catalogue and address Mr. Rutherford at 1396 Harrison St., Oakland.

Fifty Cent Pieces Running Around on Legs

And How They May be Made to Earn Five Dollars Profit

The ordinary laying hen sold in the market would bring about 50c; therefore a flock of common hens might be known as 50 cent pieces running around on legs.

But, you take these hens and feed them once a day a meal of **COULSON'S IMPROVED MASH EGG FOOD,** and these hens will coin money for you every day.

According to San Francisco market prices for eggs, a good hen (fed on Coulson's Mash Egg Food every day) will lay enough eggs in a year to value somewhere between $3.00 and $4.00. Feed the hens for 2 years on Coulson's Improved Mash Egg Food, and during this time they will lay enough eggs to earn $5.00 per hen profit, more than the cost of the feed. Then you can send the hens to market and get the original value of 50c back again for her.

So when you can make $5.00 gold pieces out of 50 cent pieces, by feeding the hens **COULSON'S MASH EGG FOOD,** you can't make money any easier.

A word to the wise is sufficient. It is to your best interest. Go to your store-keeper and order a few bags of Coulson's **Improved Mash** Egg Food.

RAISING CHICKENS?

I Certainly Would Feed Them Coulson's Mixed Poultry Foods. Why?

Johnny Bull Tells Why He Would Use Coulson's Poultry Feeds.

1st. I know how nice Mr. ——— hens looked when I saw them; what nice red combs they had, and what nice healthy birds his hens were. I know that Mr. ——— was getting two cases of eggs a week in the Fall of the year from 350 hens, when other people's hens were not laying at all, and when eggs were bringing him 51c per dozen; and he has been feeding Coulson's Feeds for over a year, which show how good the feed is, for his hens netted him a profit of $2.00 apiece last year. Most people only make $1.00 per hen per year.

2nd. I know that there are other large poultry ranchers near Petaluma who feed Coulson's Feeds. For instance, Mr. Geo. Gaston has FED THE FEED FOR THREE YEARS every day to 3000 hens. Then there is Mr. W. W. Freeman, who has fed

A 50¢ HEN FED ON COULSON'S MASH EGG FOOD EARNS $5.00 PROFIT IN 2 YRS.
50¢
50¢
50¢
50¢
50¢
COULSON'S MASH EGG FOOD
PREPARED BY COULSON CO. PETALUMA, CAL.
$5.00
$5.00
5.00
5.00

Coulson's Poultry Foods for about three years to 4000 hens; and Mr. De Rezendes at Tomales, has fed several thousand bags of it and buys it in car lots. All these are successful poultrymen, and if the feed was not good they would not continue to use it so long, and their being successful poultrymen, they know that Coulson's Egg Food GIVES THEM MORE returns than any other feed for the money.

3rd. Then there is Mr. Henry Graff, former President of the Pacific Coust Poultry Association, and a very successful poultryman, who makes his flock of 2000 hens average 184 eggs per hen per year, which is nearly $4.00 per hen, according to the market price for eggs in San Francisco last year. I know that if these successful poultrymen use Coulson's Foods, then I should use them too.

Hens Need a Good Balanced Ration

4th. Then I know that hens need a Balanced Ration, and that they need Meat Meal, Blood Meal, Bone Meal, and such things, and they get all these in Coulson's Foods. I know that if I were to go to a store to buy these Meat Meals, Blood Meals, Bone Meals, etc., that I would not be able to get anything good, for it would all be fertilizer stock, which would not be very good to feed to the hens, as it would not agree with them, and therefore prevent them from giving good results. In any case the stores from which I could buy these articles, would charge me a high price for them, as they only handle them in small quantities, while the Coulson Co. get these supplies (Meat Meal, Blood Meal, Bone Meal, etc.) by the carload, and therefore, can afford to sell cheaper, and I will get them ALREADY MIXED with the feed.

Healthy Hens are Profitable Hens

5th. I know it PAYS TO KEEP THE HENS HEALTHY, and that the hens need Flaxseed Meal, Condition Powders, Charcoal, etc., and that they get all these in Coulson's Feeds. I want my hens to be healthy, and not sickly, like other people's, which I have seen, where they were fed only cheap feed, and I know that if I feed them Coulson's MASH EGG FOOD, they will get all they require to keep them healthy, and they WILL DO SO WELL on it.

6th. What is the use in spending so much time every morning, mixing up a little chicken feed, when I can get it already mixed by machinery, and when it contains everything that is needed? All I have to do is to take the feed out of the sacks, and mix it with a little water, and it is ready for the fowls; whereas, when I mix it by hand, it would take at least two hours every morning, and then it would not be mixed as well as when it is mixed by machinery.

Cost Is Not Much--Two Pounds Feeds a Hen a Month

7th. Coulson's Mash Egg Food doesn't cost much, a 90-pound sack will make a meal for 1250 hens. A little more than two pounds will feed a hen for a month, and if a hen lays three eggs a month, it pays for the feed; and I know of some hens that were fed on Coulson's Feed, that laid 23 and 24 eggs a month.

Profit In It for the Feeder

8th. It's results that I'm after. So long as I am keeping hens, I am going to make as much profit out of them as I can. I know a poultryman at Elmira, with a small flock of 400 laying hens, which he fed every day on Coulson's Mash Egg Food, and he sold over $1100.00 worth of eggs from them in one year, making nearly $700 clear profit from 400 hens, fed on Coulson's Feed. You bet, it pays to feed the laying hens, COULSON'S IMPROVED MASH EGG FOOD.

What the Little Chicks Would Be Fed On

9th. I would feed the baby chicks on Coulson's Special Dry Chick Feed every time, especially until they get to be 6 or 7 weeks old, anyway. I would scatter cut chaff on the brooder house floor, and would spread the Coulson's Special Dry Chick Feed around in this. This would give the chicks splendid exercise and keep them busy and contented; and in this feed they would get all that they required to build up their bodies, and what a delight it is to see them grow—why, every day you can see them getting bigger. A 100-pound sack of Coulson's Special Dry Chick Feed will feed 300 little chicks for the first three weeks or longer, so the cost would only be about 1 CENT PER CHICK for the feed for the first three weeks.

10th. I know one poultryman that raised 800 chicks up to two months on Coulson's Special Dry Chick Food, at a cost of 4½ c per chick, for the feed, and he only lost 29 chicks out of the 800 when I saw them, and such fine looking fellows too.

After the chicks got to be 6 weeks old, I would give them one meal a day of Coulson's Growing Chick Feed, and after they got to be two months old, I would give them two meals a day of the Growing Chick Food, and one meal of the whole wheat or cracked wheat. At about 11 weeks of age, I would send the roosters to market, and commence feeding the pullets on Coulson's Balanced Ration Mash Egg Food once a day, and whole wheat two meals a day. And I venture to say that I would soon have a flock of birds that would average me over $2.00 per hen per year profit—by feeding them Coulson's Mixed Poultry Feeds or Balanced Rations.

Ask your dealer about Coulson's mixed poultry feeds manufactured by

4 CENTS A MONTH
feed a hen Coulson's IMPROVED Mash Egg Food Every Day. Two eggs a month pays for the feed and when you get 16 to 20 eggs a month think of the money the hen earns for you.

COULSON POULTRY & STOCK FOOD CO., PETALUMA, CALIFORNIA

CALIFORNIA CULTIVATOR

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Profitable Farm Industries for Women

In no occupation is there such a variety of industries, not necessarily carried on as a business, as in the farm home. Eggs, a staple article of diet, are taken by the hatful from the barn to the house; the bees feeding from the clover field, leave the sweet honey in the hives, needing only to be gathered for the table; the sheep on the hillside are sheared to provide clothing and they furnish mutton for the table; the strawberry patch has delicious fruit for canning; the garden and the orchard furnish green vegetables and fruit for dinner without exposure to the road and the market; the vinegar is making in the barrel; the hams are curing in the dry-house. All of these good things come to the city family in a roundabout way and through several sources. The telephone is called into service, and trips are made to the market before the table and family supplies are secured. This takes much work out of the home, although the home is also deprived of much comfort that comes from having supplies fresh and in good condition. Everywhere farms are teeming with work to supply the millions of persons who are dependent on the farmer. What have women to do with all this? Shall they tend the flocks, keep the poultry, hive the bees, husk the corn, and make the butter? No matter what one's theories are, the women will do a great deal of this work on the farm. Even with hired help they will supervise and plan, and if the children help, the mothers will be the inspiration which is the motive power behind a boy and girl not too anxious to toil all day. Often she must become manager, and assume the responsibility of the farm.

This article, however, is prepared for two other classes of women—those who wish extra occupation for pleasure and relaxation, and those who want it for profit. Many women are looking toward farming or some home industry as a healthful means of making a living in place of teaching or clerical work. Here is great opportunity for a woman's talent and executive ability. She needs to employ manual labor, but so does the farmer if he carries on much of a business. Let her furnish the ability to plan, to save, to drive, to "take time by the forelock," and get some one else to lift the beehive, climb the ladder, and hoe the garden. The latter is cheap; keeping the farm accounts and learning when to do things to advantage is a rarer accomplishment, and one which she may master.

Then there is the woman who wants to take up some special industry because, in addition to her routine of housework for the family, she is desirous of adding to her personal income. If, by skill and some help from the hired man or members of the family, she would raise a hundred bushels of strawberries and make $25 thereby, and then pay that amount for washing, cleaning or some other work which is difficult for her, she is a thrifty woman. Or, a new black silk dress purchased with egg money is just as much of a pleasure as though it were earned in some other way. The trouble is that sometimes she raises the srawberries and does the washing besides.

There is an interest which attaches to farm industries because of the influence on the children. The children will not so easily comprehend large results in the aggregate which come from farming as the older people will. But they can be interested in smaller and simpler ventures, learn to know the details of poultry keeping, or pigeon raising, or gardening, and gain a large enthusiasm for the work in hand. They do not so easily become enthusiastic when they do a little of each kind of work, with no sense of personal interest and knowledge of returns. Interesting the children in concrete industrial problems will help to keep them on the farm.

Shall all the farm women engage in a large number of farm industries, or shall each woman try to make a great success in special lines to which she is personally adapted, or which her capital and farm conditions permit? She must study to see what can be done in her particular locality under present conditions of soil and climate. She must study the market to see what will bring the largest returns. If the market is always overstocked with eggs, that is not the industry for her to follow. If there is no demand for small fruits, why waste her time? It also looks like a waste of time and strength, considering the question from the standpoint of a commercial industry, for one woman to raise a few fowls, sell a few eggs, market a little honey and a few berries, sell a few pounds of butter, particularly when her neighbor does the same. Each industry brings small returns for the money and time invested, while if each were to specialize on some line to which she and her surroundings are adapted, she would secure larger returns. This does not preclude her having eggs, butter, berries and apples for her own use raised on the farm, for therein is much satisfaction.

* * *

Poultry.—Probably the most popular and uniformly profitable home industry for farmers' wives is poultry rearing. There is probably not a day in the year when the average family does not use either fowls or eggs in the preparation of food. This makes a steady and uniform demand. Moreover, the farm is an ideal place for the flocks—they have wide range and a good variety of wholesome food. Much of the food is grown on the farm, and its cost is not felt. An important part of the food is what would otherwise be waste, as table refuse, screenings, and the like. The birds are able to forage a considerable part of their food; and green stuff can be grown in abundance. Just because so much of the food comes without direct money cost, however, the farmer or his wife may not figure up whether the fowls are really profitable or not.

* * *

Squab Raising.—In the last ten years the raising of young pigeons, or squabs, has grown into a more promising business than is indicated by the appearance of a few pigeons flying in and out of the barn loft. Now houses are designed for them, and instead of ten or twenty birds, a thousand make a profitable and absorbing industry. After the buildings are secured, the business does not call for great bodily exertion, so it is well adapted to women. In many instances poultry houses have been made to serve this purpose.

In few lines are there as quick results from the first investment as in squab raising. Two eggs are laid and in four weeks' time, with some varieties, and five or six with others, the squab is ready for the market.

A good site is required for the houses—dry, well sheltered from the winds, but admitting the morning sun. The house must be clean and well ventilated, and secure from maruders; for cats, rats and mice find an entrance if possible.

The selection of good stock is very advisable, as otherwise they only prove an expense with small returns. A good pair should yield eight, and sometimes nine pairs per year, although larger claims are made by some.

* * *

The Home Dairy.—An enormous amount of butter is made on the farms. Its quality does not average as high as it should, and as it could easily be made to average. A large proportion of farm dairy butter is sold on the market for two, three, or even five or six cents per pound less than well-made creamery butter . A small part of the farm dairy butter is excellent in quality and sells for as much as creamery butter, and sometimes more. An advance of a few cents per pound on butter throughout the year means a large sum. Three cents per pound would amount to $39 in a year in a dairy averaging twenty-five pounds of butter per week. The fact that some farm dairy butter commands a high price proves that high-grade butter can be made in the farm dairy; if any one is so skeptical as to need proof of this point.

The success of butter making, whether on the farm or in the creamery, depends first of all on the quality of milk. Fortunately, the dairy farmer who makes his own butter has this influence entirely under his own control. But improper care and ripening of the cream before churning are more responsible for the low average price of farm dairy churning than any other cause. This part of butter-making requires very close attention. The temperature must be watched and held at the point most favorable for the growth of those organisms which form lactic acid or cause milk and cream to become sour. When the cream has ripened enough or developed sufficient acidity, it should be cooled and held several hours before churn-

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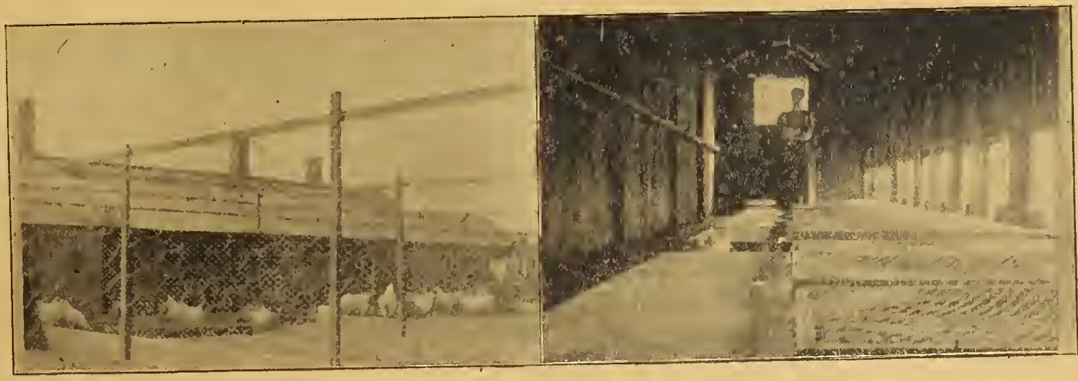

A Woman's Poultry Plant.

Deciduous Fruit Culture

COLORING OF THE APPLE.

It would certainly be a matter of great advantage to have a few of the questions that the farmer and fruit grower have to do with definitely settled once for all. Now as to the matter of the coloring of the apple. If the apple growers this side of the mountains are to compete successfully with the favored districts elsewhere, this is the principal question that stares him in the face: Can we grow an apple here with as good a color as elsewhere?

It seems to be generally accepted as a fact that the mineral element in the soil required by the tree to enable it to give full color to its fruit is the potash element. It is an equally accepted fact that our soils on the west side contain, as a rule, less of this element in an available form than is the case on the east side. This would seem, indeed, to be a self-evident fact, as our best soils here are of alluvial nature, and this element in the most soluble form would, in the nature of things, not be found in the washed lands. It is admitted by all the authorities that this most valuable element in ordinary stable manure, exposed to the leaching influence of ordinary rains, is very soon washed away and lost. In the dryer regions of the country there should ordinarily be an excess of potash in the soil.

But that there is a deficiency of the potash element in our soils of the Pacific Coast is a totally unfounded assumption. The growth and perfection of the crops produced here prove the contrary to be the fact. Though that it is in all probability in a less soluble and available form here would seem to be a plausible theory as above set forth.

How could any one know that there is a deficiency in our soils here? The crops don't lead us to think so. We admit that such is the impression that the common "penny a liner" writer gives in print concerning the fact. But the teaching from such sources is as apt to be misleading as otherwise, as most practical, thoughtful farmers know.

Let some one send a sample of his soil in the State College or University, asking for an analysis, and statement as to whether there is a sufficiency of potash in it to ensure growth of good crops. He will surely by next mail receive a printed circular setting forth that no chemist by analysis could answer his question at all. The growing of crops alone could determine. There was a time, perhaps, when our agricultural professors would pretend to say as to deficiency, and to send prescription (as a full-fledged quack doctor might do) of amount of some element to be added to bring soil up to a desired standard. But that time is long since passed (with, perhaps, the exception, it may be noted, of some in the department of agriculture at Washington City, who do not seem able to resist the temptation to exploit themselves when favorable opportunity presents.)

And now as to the coloring of the apple actual existing facts will tell, and it is fully settled that where irrigation is practiced they color well. On the east or west side of the mountains they do not color well without water in the dry months. The actual fact, tested for at least ten consecutive years in my own orchard here, demonstrates this fact as to the Puget Sound region. Three rows in my orchard trees, nearly 50 in number, are on a lower level than the balance of the orchard land, and subject each July to its soil being filled, even a few inches above the surface usually, with water from seepage from the annual freshet of the river. The fruit upon these trees has invariably a brilliant coloring, while that of the adjoining trees on the higher (3 to 5 feet) land fail to color; the soil itself being exactly similar. The Northern Spy becomes a blood red apple with the water; without it a dingy green with only a faint touch of color on a portion of the fruit. The Baldwin, with the water, is an all-over red apple. Without it it might pass for a white-fleshed Rhode Island Greening. But an Eastern man would not know it from a Baldwin.—J. F. C.

SERMON ON FIGS.

Charles Chambers, secretary of the Fresno park commission, is a firm believer in the growing of figs in this country. He thinks that our horticulturists should give this important industry more attention. He is an advocate of the Smyrna and also the Mission figs, and in the course of an interview said that the fig which was brought here by the old Spanish priests has a new use. The black fig is made into coffee, and there is a firm in San Francisco which pays out good money in Fresno in the purchase of black figs for the manufacture of this coffee. Chambers is an enthusiast on the fig question, and had this to say about the trees and the fruit:

"It seems to me that an industry which would prove profitable has been overlooked by the horticulturists in this country. Much money has been expended in securing varieties of white figs such as the Adriatic when though it has taken kindly to the soil has its drawbacks. The white Adriatics sour badly on the trees, especiablly during wet winters, and two-thirds of the figs planted in Fresno are white Adriatics. The reason of this is that it was the first fig grown on extensive scale here, and it was thought to be the fig of commerce.

"It seems strange that when growers had a fig right at their doors they should have neglected it and experimented with a fig of which they practically knew nothing. The fig to which I refer is the black fig, known as the Mission fig. This fig was introduced into the country by the Mission fathers, who among their other accomplishments were horticulturists. This fig was largely planted at the various missions and cuttings were given to the Indians to plant around their rancheras. The fig took to the soil and the largest and most prolific of these Misison fig trees is at Palm Springs on the Colorado desert. They ripen there during the first days of May, and I have been told that when Mrs. Herman Oelrichs was married, Mrs. Fair, her mother, paid about 50 cents a fig for the wedding banquet.

The chief advantage of the Mission fig is that it does not sour upon the trees and is indifferent to wet winters. It is a prolific bearer, the fruit is large, purplish in color and with a delicate bloom which makes it attractive for table purposes. The only trouble with the Mission fig is that the people in the East are educated up to the white fig and might not take kindly to the black dried fig. There is a firm in this city which once thought of drying the black fig and packing it along with the white fig, so as to make a checkerboard as it were. By this means it was hoped to introduce the black fig in the East and so win for it favor and thus create a demand.

"There is big money in the growing of the black fig, which should be brought to the notice of the land owners. A black fig has other uses besides being eaten at the table as fresh fruit and being dried. Coffee manufacturers have discovered a use for the black fig. It is dried in the usual way, but not much care is given to it, and it is shipped in sacks to the coffee man. The manufacturer converts this crudely dried fig into a fig coffee, which is extremely nutritious, and there is a big demand for this drink. There is a firm in San Francisco which has been using this black fig for this purpose. I will give you an instance of the profit there is in the cultivation of the black fig. W. B. Bannister of this county has 40 trees and he has sold the dried fruit to the San Francisco coffee manufacturers for 5 years at an average net return of $6 per tree or $240 for 40 trees, which is a good return. This means $258 to the acre when planted 30 feet apart.

I would advise that instead of planting these trees in orchard form to use them as border trees and for lining avenues, and would be more profitable than planting eucalyptus or similar non-producing trees. For instance, a man having 40 acres of land he could easily plant 10 acres of figs on this 40 acres and not encroach upon the land proper. That would mean the planting of 480 trees, which bringing in $6 per tree, would give him a net return of $2680. The tree grows luxuriantly and rapidly and requires little or no care and would flourish on the ditch banks where the Adriatic would sour.

"Parties who still adhere to the white variety as the fig of commerce should, in my opinion, select the Smyrna, as it is the true fig of commerce and is the tree which is planted all through Asia Minor, which is the home of the fig. A great deal depends on the fertilization of this fig. When properly done it is a heavy bearer. The Smyrna is a delicate tree and requires constant attention and vigilant care, especially during the fertilizing period. If neglected during this time the crop will be light. This tree can not be left to take care of itself, and the man who abandons his grove for the pleasures of the sea coast during the summer months will find that he is without an income.

"However, if the grower will take the necessary care of the Smyrna they will find that it is one of the most profitable fruit trees to grow. The fig is always in demand and I do not think that the market can ever be overstocked. I also have a great belief in the Mission fig, and I have not the slightest doubt that when this fig is once established in the eastern market it will find a ready buyer at all times. No disease has as yet shown in any of the figs and this is a desideratum to all fruit growers."

TREE TOMATO.

In less favored climes the fruit of the tree tomato (Cyphomandra betacea.) is esteemed so much that the plants are grown in specially constructed glass houses. In California we have many localities where it can safely be grown out of doors, yet few, if any, have tried it other than as a decorative plant for tropical corners.

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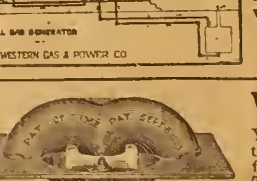

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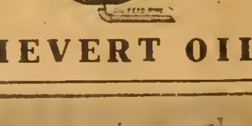

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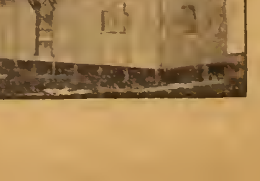

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Practical Farm Science

BEE VEILS.

A beginner should never undertake to hive a swarm or work with bees without being well protected by a veil and gloves. An experienced apairist works often for months without either veil or gloves, and, indeed, they are a nuisance. The apairist, however, knows the nature of the bees, and knows how to manage them to avoid stings; yet, it is really folly not to use a bee veil at all times. It can never be known what accident may happen, and result seriously. If the veil is not worn constantly over the face, it should at least be kept over the hat, so that it can be drawn down upon a moment's notice when necessary. For years I had no use for a veil about my face. It was in the way, and did not allow a free circulation of air, so beneficial in a hot climate. Being so overly tall in person, it was also quite an annoyance, for limbs catch on the veil, especially when in a rush. But after experiencing several stinging scrapes, and working large apiaries where the veils had to be worn, and after several instances, more or less serious in their nature, of stinging accidents had come under my observation, it was decided best to use a veil at all times and places; hence I prefer to wear a veil whenever among the bees. A good veil does not cost very much; and if made at home, the cost is only a trifle. I prefer black cotton tulle with a silk facing only, for cheapness, and the silk face is not really necessary except for minute work. For rough work the tulle is all right, and black can be seen through better, and does not blind the eyes as white does.

Bees are certainly a help to growing fruit in that they aid in fertilizing, and while they are working in the blossoms other insects do not have an opportunity to injure them.—C. R. W.

ANTS AND FRUIT TREES.

The failure of fruit upon fig, orange and other trees is often apparently due to the presence of ants, which introduce and propagate various pests to the destruction of all new growth. In cases of this kind after thoroughly cleansing the tree either by means of spraying or, if the tree permit it and the attack is not too far advanced, by judicious removal of the affected branches, the pest may be controlled if the ants can be prevented from further invasion. Constant experiment has been made during the past two or three years to exclude ants from certain affected fig trees, but until recently little success was attained in consequence of the untiring persistence of these persevering insects. Many methods were employed, some of which were found destructive to the trees, and others were rendered more or less useless on account of the time and constant attention required. The most satisfactory and probably the simplest device has been found to be a strip of fur or goat skin tied closely around the trunk in such a way that the hair points towards the ground. Various viscid and corrosive preparations have been tried, but these for various reasons have not been satisfactory. Very good results were obtained by rubbing a band of chalk (which needs constant application), eight or ten inches wide around the tree, across which the ants have difficulty in passing. By the use of either of the methods suggested, there is no reason why even growers of large numbers of fruit trees should not be able to protect them from the pests which are introduced and spread by the ants.

INCREASING HUMUS.

There are three general methods of supplying humus to the soil. The first and best is the addition of stable manure. When properly managed it adds large quantities of both plant food and humus. But manure is not always available. When such is the case, the best thing to do is to make it available. Raise more forage, keep more stock, and make more manure.

But this takes time and capital, so that other means are necessary. When stable manure is not to be had, we may plant crops for the purpose of turning them under, thus adding large quantities of humus at comparatively little cost. Plowing under green crops is called green manuring. Under certain conditions this is an excellent practice.

A third method of adding humus is to grow crops like clover and timothy. These crops are usually left down for two years or more. During this time their roots thoroughly penetrate the soil. Old roots decay and new ones grow. When the sod is plowed up, more or less vegetable matter is turned under. This, with the mass of roots in the soil, adds no small amount to the supply of humus.

THE USE OF LAND PLASTER.

The chemical analysis of gypsum or land plaster shows it to be composed of 46 per cent of sulphuric acid, 33 per cent lime and 21 per cent water. It has been used as a fertilizer for many years, Benjamin Franklin being the first to introduce it in this country. Of its great efficacy as a fertilizer we have the authority of Liebig and many other distinguished agricultural chemists. The experience of practical farmers gives ample proof of its value in agriculture. Liebig, regarding its efficacy, says that as a general thing vegetation absorbs less than one-eighth of its weight through its roots from the soil, the remaining portion being absorbed through its leaves from the atmosphere.

But gypsum or land plaster is not, strictly speaking, a manure; it only attracts ammonia and other fertilizing gases from the atmosphere through the leaves and on to the roots for the use of plants. In this connection, practical experience has done more than aught else in directing the attention of agriculturists to the great use of plaster in the matter of fertilization. Scientific men, while they all agree as to the efficacy of plaster, differ as to its manner of action. This much, however, is agreed upon by all hands, and that is that plaster in its natural state is a compound of sulphur and lime, and it is pretty generally admitted that the winds passing over the surface of ground sown with plaster, freighted as they are with ammonia arising from decaying vegetable matter, barn-yards, hog-pens and the like, the ammonia dissolves the plaster, thus freeing the sulphur from the lime, and in doing so, immediately unites with the sulphur and forms the sulphate of ammonia, one of the most valuable fertilizing agents known.

NITROGEN FIXATION.

The notable progress which has recently been made in the development of commercially successful methods of fixing the free nitrogen of the air, and thus making it available for agricultural and other industrial purposes, should go far toward reassuring those who are disposed to view with alarm the rapid exhaustion of the world's principal known supply of combined nitrogen, namely, the nitrate deposits.

The rapidly increasing demand (which has been from less than 200,000 tons of nitrate in 1870 to over 1.500,000 tons in 1095) and the steadily diminishing supply have stimulated unusual activity in efforts to apply the discoveries of science to the solution of the great industrial problem of finding a practical means of maintaining a cheap and reliable supply of fixed nitrogen.

The encouraging results yielded by the Frank and Caro calcium cyanamid process have already been referred to (E. S. R., 15, p. 423). Further developments in the application of this process have fully justified the promise of the earlier trials, and factories have been built in Italy, Germany and elsewhere to test the process on an extensive commercial basis. The numerous experiments which have been made to test the fertilizing value of the so-called lime nitrogen (Kalkstickstoff) prepared by this process indicates that when used with proper precaution and under certain restrictions the product has a fertilizing value in general but slightly inferior to that of nitrate of soda and somewhat superior to that of sulphate of ammonia. The results of hundreds of such experiments on a great variety of soils and crops are given in a recent 120-page report issued at Rome.

Improvements are constantly being made which increase the efficiency of the process and lessen the cost of the product, and which encourage the belief that where cheap water power is available this process can be made to yield a product capable of competing successfully with nitrate of soda in the markets of the world.

The most recent and most notable development in the line of fixation of the nitrogen of the air for commercial purposes is, however, in the nature of a return to the earlier methods of direct oxidation by means of electric discharges. Prof. K. Birkeland of the university of Christiana, Norway, and S. Eyde, a Norwegian civil engineer, have devised a process for greatly increasing the size and efficiency of the ordinary electric arc, so that oxidation of the nitrogen is more rapid and is accomplished with much less expenditure of electric energy, and hence at less cost than in preceding processes.

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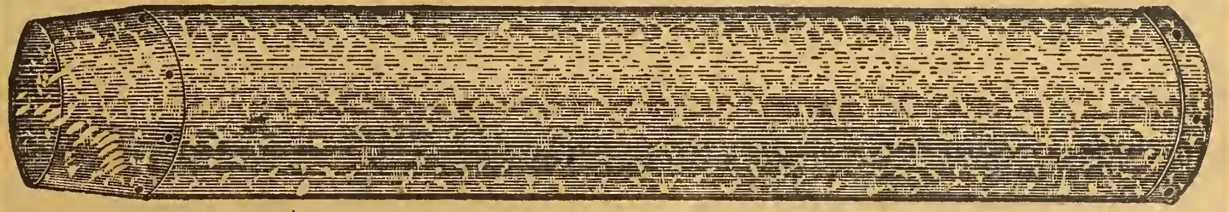

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Irrigation and Pumping

DUTY OF WATER.

The conditions affecting the amount of water required by any particular crop are numerous, and a change in any one or a number of them will change the water requirement to a considerable extent. Under constant conditions, however, it is to be supposed that the amount of water required is also constant. The most important of these determining conditions are:

1. The quality and condition of the soil. A gravelly or sandy soil will require more water than a loam, on account of greater percolation, and a well tilled soil will lose less moisture by evaporation than will one in a poor condition of tilth.

2. The depth of the ground water plane below the surface. If this is quite near the surface, no irrigation may be required, as upward movement of water due to capillarity may supply sufficient moisture for the plants. On the contrary, if the ground water plane is found at great depth, the soil will lose large amounts of water by downward percolation which would otherwise be available for plant growth.

3. Average humidity and temperature of air and temperature of soil during growing season. These conditions affect evaporation from the soil and transpiration from the leaves of plants. In the arid regions, where the amount of moisture in the air is relatively low and the temperature high, the loss of water from the sources mentioned is quite large and is further increased in certain localities by winds.

4. The slope and general configuration of the surface of the field. This affects the surface and underground drainage and consequently the amount of water which must be supplied to make up losses in the soil moisture.

As distinguished from the amount of water required, the amount of water actually used depends necessarily upon the above conditions, and also upon the skill and judgment of the irrigator; the condition of the land, whether level or uneven; the efficiency of the distributing system; the rainfall during the season; and not least important, the character of the water right and the amount of water available. It is an observed fact that the more water available, the more will the irrigator apply to the land.

The average irrigator in this state being a highly practical person, seldom gives much thought to the moisture requirement of the particular crop which he is watering, nor does he often trouble himself to practice economy in the use of water. The application of such a quantity of water to a crop as will bring the largest yield for a given amount used, is a question which however important to irrigators in thickly settled and inadequately watered portions of the West, has up to the present time been only of speculative interest to the Wyoming ranchman. They have rarely realized more than $10 per acre yearly from the yield of their irrigated lands, and the care and trouble necessary to make better use of the water has not been warranted by the value of the water which might be saved or of the increase in yield of crop which might be produced. The time is not distant, however, when present practices must give way to more advanced methods. Wyoming can boast of being more bountifully supplied with water than any State in the arid West, yet its comparative abundance should offer but small excuse for wastefulness in its use. In many portions of the State, neither land nor water has as yet the economic value which they are certain to acquire later, but already in certain sections of the State the entire normal flow of the natural streams is appropriated; ligitation between conflicting rights, local and interstate, is threatening, and the only way in many instances in which it is possible for a man to extend the area of his cultivated land is to make more careful use of the water which he now controls. It is no exaggeration to say that if the area now irrigated were watered with economy and with a more careful insight into the needs of land and crop, the cultivated area could largely be increased, probably by one-fourth or one-third of its present area. This applies particularly to the irrigation of hay land. The present practice of keeping the land in a thoroughly soaked condition for from two to four weeks at a time cannot but result eventually in ruining the land and producing growths of plants of doubtful value as forage. The economy in using water of any appreciable value in producing the hay crops upon these lands is very doubtful. To run a mowing machine over probably 500 acres of irrigated land in order to cut about 300 tons of hay certainly shows a ridiculously low valuation, both of land and water, as measured by the crop produced.—B. F. Fleming.

A GREAT IRRIGATION PROJECT

A great irrigation project, involving an expenditure of about $25,000,000 has been authorized by the Secretary of State for India. The area commanded by the canals is about 6,250 square miles, although only a small part of it will be reached for a number of years to come. In this area, it is estimated, about 3,000 square miles will be irrigated. The water will be taken from the Jhelum river, in which there is now unappropriated at the site of the headworks a flow of 5,600 to 7,900 cubic feet per second. It is believed that the investment of public funds in these works, great as the sum may be, is well warranted by the economic advantages of the undertaking and the reasonable assurance of ample interest payments.

IRRIGATING SEASON.

A question of no little importance to the framer of irrigation law and to the designer of canals and reservoirs is the length of the irrigation season, or period during which water should be supplied by canals for use upon lands under them. This period varies, of course, with the locality. In the warmer portions of the west it may extend over the entire year.

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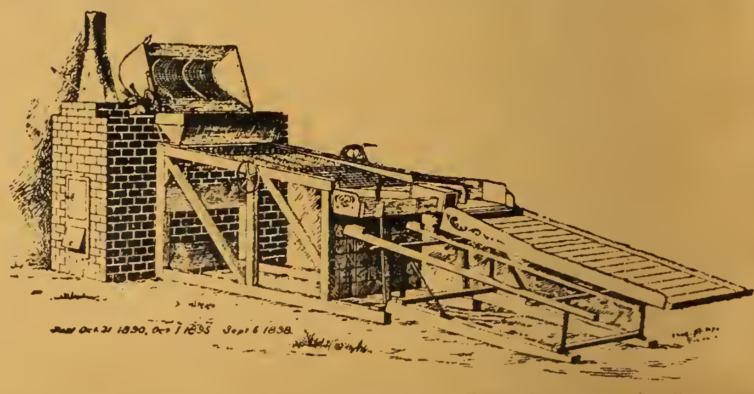
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A1 Valencia Late Orange Trees

Owing to an unprecedented demand for Valencia Late Orange Trees during the present season, the market has been nearly exhausted, with the result that many have been unable to plant for want of good nursery trees. In the face of this situation one of our heavy contract buyers at the eleventh hour changed his order from Valencias to Navels, which put us in possession of a large block of one-year-old buds of prime quality and ready for immediate delivery. This stock is first-class in every particular and will be sold at once, as the demand for Valencias exeeeds present supply. **If you are in want of Valencia Late Orange Trees it will be to your interest to correspond with us at once in relation to this stock. First come, first served; write today.**

San Dimas Citrus Nurseries **San Dimas, Cal.**

With the Citrus Growers

BY J. W. MILLS

PLANTING A CITRUS ORCHARD

The plan of planting a citrus grove should not be any different from that of any other orchard when the trees are to be approximately the same distance apart. There is nothing gained by planting on the septupal plan, six trees in a circle with one in the center, over the system of planting in squares. The space occupied by the tops of the trees does not indicate the manner in which the roots are distributed in any kind of an orchard. The roots will fill the soil in a citrus grove alike whether the trees be planted in squares, diamonds, or septupal. This has been fully demonstrated and this should settle for all time the question of the plan. Every practical farmer knows that it is much easier to cultivate an orchard that is planted in squares than when planted any other way. These remarks apply to orchards to be planted in straight rows. When the orchard is to be planted on a hill side whose slope would cause cutting out of the irrigation furrows, it is more profitable to plant on contour lines. This plan is being followed by the most careful growers who have land so situated that it works to advantage. This plan does not make cultivation more inconvenient, neither does it detract from the appearance of the orchard in fact it removes the artificial effect of straight rows, giving the plantation the appearance of having been cut out of a natural grove. The great advantage gained is in the establishment of irrigation furrows which will carry the water along the rows on a better grade than is usually possible on comparatively level ground where the trees are planted in straight lines.

The proper distance apart at which orange trees should be planted is not now and perhaps never will be settled. Individual opinions differ on this point and it is not a vital question. Trees should not be planted so close that they will crowd when 15 years old, neither can they be so profitably grown when their outer branches are ten feet apart at 30 years, unless the grove is planted for the express benefit of the following generation. About 20 to 24 feet apart is a good range of distance.

It is generally accepted that orange or lemon trees should be planted in the late spring or early summer. This we think is immaterial if the best trees are selected in the nursery. Trees which are planted in April and have the tops entirely removed at the time of transplanting from the nursery will not make as good trees or go through the winter as well as good trees that are carefully selected, balled and planted with special care as late as the middle of July. Mr. J. H. Reed of Riverside first conceived the idea of transplanting the trees from the nursery without removing any of the top excepting the ends of the soft growth. The trees are carefully selected, those with large tops and heavy stems being preferable. The trees are well soaked in the nursery before removing so that they may be properly balled. They are taken directly to the field and placed in the holes previously made for them. The holes should be at least two feet deep and two and a half wide. The earth should be filled in around the ball so that the trees stand in the holes at the same depth as they did in the nursery. The soil should be settled around the trees by water. The ground should be well soaked all around the newly planted tree so that it will have a surplus to draw on till the following irrrigation. Of course thorough cultivation should follow. We have found by practice that if the trees are taken from the nursery and stacked together under a partial shade as is afforded by a lath house four or five days, keeping them moist enough to prevent wilting, that they will recover from the loss of the roots suffered at the time of digging. If they are slightly wilted when placed in the holes and the water is turned on they will take up the water more rapidly than when thoroughly soaked just before planting.

Mr. Reed's directions after planting are as follows: "A small amount of fetilizer is applied soon after planting for the young roots to use when they first start out from the balls. A pure bat guano with a big percentage of nitrogen, about three-fourths of a pound to the tree, has been found to give the best results, but any commercial fertilizer rich in nitrogen or animal fertilizer, if placed properly and kept moist, answers well. It is applied in trenches each side of the ball, at right angles with the irrigation furrows and reaching to them. They may be made by a deep furrow and deepening with a trowel to ten or twelve inches. The material is carefully distributed and slightly mixed with earth at the bottom of the furrows; the water from the irrigating furrows keeping this always moist, it is available as soon as reached by the rootlets. This also tends to deep rooting. Thorough irrigation should follow planting every twelve or fifteen days through the summer. The whole space between the rows should be thoroughly and deeply wet—not merely a narrow strip on each side of the rows. I have traced roots that have grown during the first summer over six feet from the tree, and these should be well supplied with moisture at all times."

The advantage claimed by Mr. Reed is that the tops of the trees are retained and they are made use of immediately. The large leaf surface is brought into use at once, which means that instead of the reserve force of the tree being drawn upon to start a new set of leaves and branches the leaves retained enter at once upon the work of further building up the trees.

Orange trees planted according to the Reed system have tops that are from twice to four time as large when they start new growth as trees planted after the ordinary manner are after they have been planted six months. Trees planted by the Reed system have produced ten boxes of oranges per acre the second year and one hundred boxes per acre the third year.

We claim that trees planted late and as described above will stand the cold of the following winter better than trees planted on the old plan which have made an entirely new top of soft growth.

. Valencia Late Orange Trees .

We have a limited number of Valencia Late Orange Trees, 2-year, ¾ inch and up, running up to 1½ inch. on which we are making especially low prices, as we wish to move this stock this season. We have just sold to the largest and most experienced planter in Southern California a large number of trees to replant those that he had bought from another nursery, and he admitted that we had much better trees than he could secure anywhere else. As a 2-year-old tree will bear one year sooner than any 1-year tree, and as our stock has not been culled over, we believe that at our present prices they will produce enough more than any 1-year-old tree offered to more than pay the total price we ask for them. It will pay you to see these trees before you buy, as the amount of Valencia Late trees of any age unsold is very limited; it will pay you to write today, as tomorrow may be too late. We furnish these trees from our nursery either at Glendora or Riverside. Also a limited amount of Lemons, Seedless Grape Fruit, and other varieties of Oranges.

Redlands Nurseries, E. I. Martin, Prop., Redlands, Cal.

The Ornamental Garden

BY ERNEST BRAUNTON, LOS ANGELES, CAL.

THE COTTONWOOD.

The cottonwood is perhaps the best of all our poplars as a single specimen. It makes a noble tree, spreading its gray branches far and wide. But like the aspen, it is cheerful and restive. One is not moved to lie under it, as he is under a maple or an oak. Its leaves rustle with the lightest movement of air. The ripple of its foliage alway recalls to my mind the play of wavelets upon a pebbly shore. The day is never so dark, but the cottonwood reflects a flood of light.

Some of the forms of the black poplar of Europe are especially satisfactory for the production of lively effects in planting. Of these none is better than the form known to nurserymen as Populus elegans. It has a most pleasing light and tremulous foliage, the effect of which is heightened by a twiggy character of growth and a reddish cast to the leaf-stalks and young shoots. It is an elegant tree and well adapted to planting in front of heavier foliage in the most conspicuous portion of the grounds.

Some of the silver or white-leaved poplars produce the most striking contrasts of foliage, especially if set near darker trees. Bolle's poplar (Populus Bolleana of the nurseries) is one of the best of these trees. Its habit is something like that of the Lombardy. The upper surface of the deeply lobed leaves is dark dull green, while the under surface is almost snowy white. Such emphatic trees as this should generally be partially obscured by planting them in amongst other trees so that they appear to mix with the other foliage, or else they should be seen at some distance. Other varieties of the common white poplar or abele are occasionally useful, although most of them sprout badly and may become a nuisance.

NATURAL GARDENING.

In the artificial adornment of grounds by means of plants, nature is our best instructor. From her we learn the use of grass, flowers, vines, shrubs, and trees, and how to combine them to the best advantage. By growing together for ages, the various classes and species of plants have developed forms, habits, and requirements which enable them not only to live and thrive in harmony, but actually to assist one another.

Man should first provide for his necessities, then for comforts, and finally for pleasures. In a new country such as ours, the expenditure of time and means for the adornment of grounds has naturally received too little attention. The people have been necessarily concerned with acquiring lands and buildings. But a stage of development has now been reached when Americans should give more attention to the embellishment of their home grounds.

BALSAM.

A native of India, the garden Balsam loves hot sun, rich soil and plenty of water. The young plants are quick, sure growers, and from seed sown in the open ground in May soon form handsome bushes thickly massed with large, rose-like flowers. Transplanting two or three times has a tendency to dwarf the plants into better shape and to make the flowers more double.

BEAUTY OF FLOWERS.

While flowers are primarily utilitarians in purpose, the end is attained by attractive and alluring means. The beauty, fragrance, and sweetness of the flower are not vain attributes; each is designed for a suitable purpose. The bright colors are the gala-day attire of these natural fairies to attract and allure the passer by, be he insect, bird, or man. The perfume wafted upon the still night air suggests the whereabouts of the fragrant night-blooming flowers to moths and other night-flying insects, while the cups of honey at the base of the petals hold a reward for those who have heeded the signal of the color or the odor. The pot of nectar is a sufficient reward for the insect, and the transfer of pollen from anther to stigma by the clumsy but welcome guest is the end for which all this beauty, fragrance, and sweetness have been produced.

Beautiful plants and flowers naturally grouped are pleasing because they are restful. Association with nature is soothing because the crudities of man's invention in which friction is such a large factor are all eliminated. The sounds in the woods are musical, harmonious, and rhythmical, soothing and pleasing in effect, while the colors are beautifully blended, holding the eye and the attention without effort and without fatigue. Nature in such moods is restful.

AGERATUM.

"For strengthening the garden's color forces in blue, no annual is so good as the ageratum." Though ordinarily used in bedding and borders in contrast with such plants as geraniums, perillas, amaranthus, etc., the rose, white, and blue ageratums are exceedingly attractive when mingled with alyssum, candytuft, and similar plants. They grow well upon almost all soils and through a wide range of climate; for that reason many combinations with them are possible. The plants are neat, bushy, erect, with a continual profuse clustering of pretty brushlike flowers throughout the season. The dwarf blue sorts make fine borders and are much used where contrasting color effects are desired. For early bloom the seed should be sown in cold frames or in boxes in the house early in the season—March—but for summer and fall bloom the seeds may be sown in well prepared beds in the open. Seeds sown in August will produce good plants for winter flowering.

ZINNIA.

The zinnia is very easily grown from seed sown in the open ground. When sown in April the plants will bloom abundantly and continuously through the entire season. Of late great improvements have been wrought both in the color and form of the flower. During the month of August Zinnias are at their best. To secure large flowers and a profusion of bloom the plants must be given ample room for full development, as well as an abundant supply of food. Strong, rich soils suit the Zinnia. If the seeds are sown in a dwelling house or in a hotbet in March and the young plants are pricked out once or twice before they are placed in their permanent situations more satisfactory results will be secured than from outdoor-sown seeds unless equal care in thinning or transplanting is given. The plants can be used for groups, beds, borders, garden lines, and summer hedges. Their average is 1 1-2 feet.

SNAPDRAGON.

The Snapdragon is one of our finest perennials, flowering the first year as annuals. Its bright-colored, curiously formed flowers always excite interest, and among the newer sorts are flowers of a great variety of colors and markings, some of wonderful brilliancy, others soft and pleasingly shaded, and still others with a velvety appearance. Their rich spikes are beautiful for cutting and keep fresh a long time. From seed sown in the open ground plants will bloom in July and August. For early flowers sow under glass in February or March and transplant into beds of warm, dry soil moderately enriched. Average height, 1½ feet.

BEGONIAS.

Begonias are easily grown from seed, especially the semper-florens class, which bloom when only one or two inches high. They make fine bedding plants, giving a mass of color the entire season; stand the sun well; and require only a light, rich soil, and plenty of water to make a fine show. The foliage is almost as beautiful as the flowers, a large proportion being shaded bright red. The flowers are white, shades of rose and pink, crimson and scarlet or white with red or pink margins. They are easily grown from seed, bloom early and unceasingly, and are the most brilliant plants for pots or bedding that can be found.

ARCTOTIS.

A remarkably handsome new annual from Southwest Africa. It forms much-branched bushes 2 to 3 feet high; its flowers are large and showy, being pure white on the upper surface, embellished with yellow zone, the reverse of petals pale lilac-blue; altogether a lovely flower, of the easiest culture, and flowering in constant succession from early summer until late fall.

Kellogg's Ant Paste

Azusa, Los Angeles County, Cal., Dec. 8, 1905.
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In the Vegetable Garden

BY ERNEST BRAUNTON

BEETS.

The red garden beet may be grown in any good soil, but rich sandy loam will give the best results. Sow the seeds in the spring as soon as danger of frost has passed. Beets should be planted in drills 12 to 18 inches apart, and when the plants are well up they should be thinned to 4 or 5 inches in the row. If desirable to plant in rows 3 feet apart for horse cultivation, the seeds may be sown in a double drill with 6 inches between, leaving 30 inches for cultivation.

Two ounces of beet seed are required to plant 100 feet of row, or 5 pounds to the acre. As a rule each seed ball contains more than one seed, and this accounts for beets coming up very thickly. The seed should be covered to a depth of about 1 inch. For a succession of young beets during the summer, plantings should be made every four or five weeks during the spring months. Beets intended for winter storage should not be sown until late in the summer, the crop being harvested and stored in the same manner as turnips. Sugar beets are often substituted for the ordinary garden beet, especially for winter use.

Beets are used for pickles, or boiled, sliced and fried in butter, adding a little vinegar before removing from the fire. The young plants are used for greens.

POTATO CULTURE.

Considered from the farmers' standpoint the potato plant is a machine for the production of starch, the principal constituent of the potato, together with the small amount of other substances combined with it in these enlarged under-ground stems, which we use as food. The raw material for the potato substance comes from the soil water, taken up by the roots and the gases of the air. While the sunshine and other conditions are favorable these substances are organized in the leaves, and gradually pass downward, and accumulate as starch below ground. Since such important work is done by the slender fibrous roots and the expanse of leaves exposed to the sun. the necessity of keeping these organs in good working condition is easily seen. And theoretically one might say that the more water passed through the plant from the roots, and the more sunshine received by the leaves, the more potatoes produced.

The ideal conditions for healthy growth are loose, rich, well-drained, but moisture-retaining soil of moderate coolness, rich in humus, and used in rotation with legumes. Heavy soils are not so good as light and need to have careful management. Constant moisture is the first consideration, but wet soil is equally as fatal to good growth as drought.

After considering suitability for desired use in earliness, production and quality. the variety planted should be selected for resistance to drought, disease, insects, etc. And if it is desirable to grow one's own seed each season, the stronger, more productive and resistant plants should be picked out for seed, this keeping up or improving the seed tubers, has more to do with their success than the size of the tubers used for seed, or how they are cut.

Partly rotten potatoes or those showing imperfections, indicating lack of vitality, should never be planted, as they are apt to communicate disease to those that grow from them, and the cleanest, most healthy-looking seed possible should be used. One poor potato saved by planting it is usually equivalent to throwing away a whole hill.

The weakening of the seed by too early sprouting has to be carefully guarded against, and may be done by careful storing, or by the use of northern seed. The object of the starch in the potato is to feed the young plants until they can get well rooted, and they must suffer if it is exhausted by sprouts that are lost before planting. The cut seed may be injured by drying out, or heating, if kept more than ten days before planting. The partly dried pieces withstand rot better if planted in wet soil.

EGGPLANT.

The plants for this crop should be started and handled in the same manner as described for the tomato. After the weather has become settled, and the ground quite warm, set the plants in the garden in rows 3 feet apart and 2 feet apart in the row. The soil best adapted to the production of eggplant is a fine, rich sandy loam and should be well drained. Cultivate freely and keep the plants growing rapidly. Many growers believe that fresh stable manure should not be used in connection with the growing of eggplant and that the land should not contain unfermented vegetable matter to any extent.

Eggplant is used in several ways, among which are the following: Peel and cut into slices one-half inch thick, soak in salt water one hour; boil until tender; then coat with rolled crackers or flour and fry in butter or fat. Another method is to steam or bake the eggplant whole and serve in the shell, the pulp being eaten with salt, pepper and butter.

NON-FRUITING OF MELON VINES.

Many practical gardeners hold the opinion that some plants, like the cabbage, and also pumpkins and melons, head and fruit better when old seeds (two to three years of age) are sown. This is an exception to the general rule, which shows that fresh seeds possess a higher germinating power and produce more vigorous plants. A French experimenter, Cazziola, found that melon and squashes raised from fresh seed bore a larger proposition of male (staminate) than female (pistillate) flowers, while older seeds bore more female than male flowers. This may be the reason of the scarcity of female flowers in certain cases. It is well known, however, that male flowers of plants of the melon and squash tribe usually appear five or six days before the female flowers, and also that they are much more numerous than female flowers. In this way while plenty of pollen is provided, self fertilisation of the female flowers by the male flowers of the same plant is checked, and cross fertilisation, aided by the agency of insects and wind, is made easier. As a general rule, a practical result of cross fertilisations, is that more vigorous and hardier subjects issue. Some gardeners affirm that when growing pumpkins or melons it is advisable to mix a small proportion of new seed with the older seed, to provide vigorous and leafy vines with an abundance of pollen.

CULTIVATION OF GARDEN CROPS.

Frequent shallow cultivation should be employed for most garden crops, and during dry weather the depth should not exceed two inches. By keeping the surface soil well stirred what is termed a "dust mulch" is formed, and while this layer of finely divided soil will become quite dry it prevents the escape of moisture through the pores of the soil. A mulch consisting of fine manure, clippings from the lawn, or any similar material, spread to a distance of 10 or 12 inches around the plants will preserve the moisture; but the mulch should not be so heavy as to exclude the air.

A crust forming over the soil after a rain or watering is detrimental to plant growth and should be broken up as soon as the land can be worked. To determine when the soil is sufficiently dry for cultivation, apply the usual test of squeezing in the hand. Sandy soil can be worked much sooner than clay soils after a rain. Too much importance can not be placed upon the matter of thorough cultivation of the garden, and if the work is promptly and properly done there will be little difficulty in controlling weeds.

IMPORTANCE OF THINNING.

Where plants are not to be transplanted twice, but remain in the plant bed until required for setting in the garden, it may be necessary to thin them somewhat. This part of the work should be done as soon as the plants are large enough to pull, and before they begin to "draw" or become spindling from crowding.

When thinning plants in the plant bed it should be the aim to remove the centers of the thick bunches, leaving the spaces as uniform as possible. When thinning the rows of seedlings in the garden the best plants should be allowed to remain, but due consideration should be given to the matter of proper spacing. Failure to thin plants properly will invariably result in the production of an inferior crop.

THE SEED BED.

In the broadest sense the garden is a seed bed, as the seeds of many crops are planted where they are to grow. As the term "seed bed" is used here it refers to some specially prepared place for starting plants. from which they may be transplanted to their permanent positions in the garden. The location of an outdoor seed bed should be such that it may be conveniently reached for watering, and it should be naturally protected from drying winds.

Good soil for a seed bed consists of one part of well-rotted manure, two parts of good garden loam or rotted sods, and one part of sharp, fine sand. The manure should be thoroughly rotted, but it should not have been exposed to the weather and the strength leached out of it. The addition of leaf mold or peat will tend to make the soil better adapted for seed-bed purposes. Mix all the ingredients together in a heap, stirring well with a shovel, after which the soil should be sifted and placed in boxes or in the bed ready for sowing the seed.

Weed seeds and the spores of fungous diseases that are present in the soil for a seed bed may be killed by placing the soil in pans and baking it for an hour in a hot oven.

PARSLEY.

After soaking the seeds of parsley for a few hours in warm water, they may be sown in the same manner as celery seed and the plants transplanted to the open ground. In the south it will thrive in the open ground during the winter, but it can not withstand the heat of summer. The plants should be set in rows 12 inches apart and every 4 inches in the row.

The leaves of parsley are used for garnishing around meats and for flavoring soups.

The latest vegetable novelty is the black potato. It has been introduced into London from the Congo, and is said to be good to eat, but chiefly valuable for making ornamental salads.

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Farmers in Congress.—It is generally considered good policy, in business life, that "the shoemaker should stick to his last;" in other words "every man to his own calling." In organizations of every class save one, when representatives are wanted for the transaction of business, a committee is appointed, with power to act, because of their peculiar fitness for the work under consideration and their knowledge of the needs of the people whom they represent.

The one marked exception to this mode of procedure lies in political life. There is no question but that, in the great majority of cases, men are selected because of their pull with the party leaders—"the powers that be"—not by reason of being qualified for the position. In a few cases, in our own state even, the rural communities have risen in their might and demanded that a farmer represent them in the halls of legislation, both at Sacramento and Washington. We use the term "in their might" advisedly, for in some districts the farmers form the vast majority of voters, and may, if they so choose, send their humblest citizen to speak and act for their interests. They have both the might and the right.

In great centers of population, like San Francisco and Los Angeles, it is to be expected that we will send forth legislators to both State and national capitals who are intimate with city life and its needs as well as with those of the country contiguous. Such a course is expected and recognized as just. But we have many districts (State and Federal) that contain no cities of any size, in which all the towns are dependent for their very existence upon the support of the farmer. In such cases the farmer should not be slow to recognize and claim his rights. Men should be selected for positions of trust and influence who not only understand the needs of the district and are in sympathy therewith, but only those should be chosen who are financially interested in the section they wish to represent—landowners, real farmers—part of the very life-blood of the community. If farmers will but learn to select one of their own number for important political office, one who is competent and trustworthy, and give him their unqualified support regardless of party lines, then, and not till then may they expect to see legislation especially designed to meet the needs of our great and increasing agricultural interests.

* * *

Alcohol for Fuel.—The most importnat enactment of the 58th Congress in its relation to the farmer was that for the withdrawal from bond, tax free, domestic alcohol when rendered unfit for beverage or liquid medicinal uses by mixing with suitable de-naturing materials. That part of the act which sets forth the purpose of the new law are as follows:

"That from and after January 1st, 1907, domestic alcohol of such degree of proof as may be prescribed by the Commissioner of Internal Revenue, and approved by the Secretary of the Treasury, may be withdrawn from bond without the payment of internal-revenue tax, for use in the arts and industries, and for fuel, light, and power, provided said alcohol shall have been mixed in the presence and under the direction of an authorized Government officer, after withdrawal from the distillery warehouse, with methyl alcohol or other denaturing material or materials, or admixture of the same, suitable to the use for which the alcohol is withdrawn, but which destroys its character as a beverage, and renders it unfit for liquid medicinal purposes."

This bill is a very broad and liberal measure and the part the farmer is to have in its general introduction is to be seen from figures made by an expert on the yield of alcohol from various farm products which however does not include fruits, of which California can furnish no inconsiderable amount that at present is almost or entirely wasted. All culls and unmarketable fruit may now be turned into alcohol for fuel purposes, at a very slight cost as the article may be manufactured from 6 to 15 cents a galion according to the material used.

An acre of ground planted to corn will yield 140 gallons. One yielding 300 bushels of the ordinary potato will give 245 gallons, and it is said there are varieties of potatoes not suited to the table and not now grown which would give as high as 500 gallons of alcohol to the acre. The sweet potato is also a yielder of a high percentage, as is also the sugar beet. The corn stalks grown on an acre of ground and at present wasted, are said to be capable of producing 170 gallons of commercial alcohol. Almost everything grown on the farm is available for its manufacture and it is to be expected that with the removal of the tax and the wider introduction of the alcohol for light, heat and power, a distillery for its manufacture will become in time as fixed a feature of every farming community as is now the flour mill. Each community will be found to a large extent making its own alcohol for domestic use out of the waste products of the surrounding farms, the surplus of its fields.

It is expected that it will be the most desirable substitute for coal and oil fuels, while for burning in lamps it makes a better light and a quart of alcohol burns about twice as long as one of kerosene. With a cheap supply, alcohol would become a formidable competitor of gasoline in the operation of automobiles and small engines, not only as a direct power, but as a fuel for steam-propelled ones. In Germany there are said to now be 6000 such engines run by the duty-free alcohol of that country. Thousands of small engines now in use with gasoline as the explosive or steam generating fuel can be operated without mechanical alteration by the substitution of alcohol. In engineering circles it is accepted as the coming substitute for both gasoline and kerosene, and we may reasonably expect to note its use, in the near future, in solving the problem of cheaper water for irrigation purposes in California.

* * *

A Golden Opportunity.—Every true Californian is watching with interest the progress of the battle for a better, cleaner, safer, more beautiful San Francisco. The opponents of improvement are leaving no stone unturned to defeat the plans, which, if carried out, would eventually give us a metropolis to which the whole State might point with pride as being a twentieth century city in every respect.

For years and years before the Baltimore fire one of the greatest drawbacks to the old business section of that city had been its narrow streets, and with the steady increase of business the thoroughfares were so crowded that traffic was greatly hampered. Before the fire plans for the widening of some of the streets had been prepared, but there was one obstacle, and that was the great cost, since not only did the land have to be bought, but the warehouses as well.

When that section was a mass of smouldering ruins the mayor called together a committee of the leading citizens of the city and the situation was talked over. It was decided to appoint a citizens' emergency committee to consider the improvements to be made. Within a week the committee submitted its report, which has since been carried out, and which involved the widening of no less than a dozen important thoroughfares, adding to the city's street area 348,710 square feet. Many of these streets were widened from 50 to 76 feet, and one from 45 to 108 feet.

The carrying out of the suggestions for the improvement of the streets was a stupendous task, but the Burnt District Commission was indefatigable and where property owners would not accept what was considered fair valuations for their lots the matter was sifted out in the courts, and, be it said to the credit of the latter, the work was pushed through and speedy settlements were made.

Overcoming all obstacles the work of widening the streets progressed rapidly, and today the thoroughfares are completed and paved. The settling of the street widenings and the laying off of the new lines caused some delay to the rebuilding, but several men took chances, and the moment the new street grades and lines were established the work of rebuilding went on rapidly. It was less than nine months that work had advanced so far that the burnt district was no more and the more euphonious name of new district was given to it.

This name was well deserved, and, as the hundreds of fine warehouses, stores and office buildings arose from the ashes, the advantages of the widened streets were rapidly perceived, and there has been considerable regret expressed that more streets were not so improved.

San Francisco now has a golden opportunity if she will but grasp it, to so rebuild that she will be pointed to in the future as a model that budding municipalities might copy with both profit and pleasure. From a standpoint of civic beauty the old San Francisco had nothing to admire aside from Golden Gate Park, but much that called for unmeasured criticism. She now has the golden opportunity of proving to the world that the terrible disaster so recently visited upon her was somewhat of a blessing in disguise. May she prove equal to the emergency and arise from her ashes the "City Beautiful."

* * *

The Farm Boy. The boy who is brought up in the country lives, in comparison with his city cousin, a broad life, filled with rich experiences. Of the two, only he may at all times enjoy the fresh air, the green fields, the running streams, the luxurious foliage, the joyous, singing life of bird and bee and the thousand and one joys which rural scenes alone provide and which the city boy knows not.

Too often, in the case of the city boy, is a "shop" handy, where he may take all his "breakdowns and bust ups," while in the country the boy learns to "do things." No handy shop with the multiplicity of conveniences easily within reach—he is forced, luckily, to rely upon his own resources and it is the resourceful man who "does things" all through life, who is equal to every emergency.

The various phases of farm life are all educational, they make the farm boy self-reliant, independent. When confronted with trouble or danger he is equal to the occasion with a sure and certain solution to every problem. We pity the boy who has not been through the trying experiences connected with farm life for, unless he has passed through a similar schooling in other lines or is naturally self-reliant he is not prepared to stand the "crucial test" with which all are confronted who seek for success in this life.

Parents should strive their level best to make life attractive on the farm. See that your boy gets as many holidays as the city apprentice. Give him a plot of ground upon which he may grow anything he chooses. Let him have a fine calf or pig for his "very own." And above all things, while trying to steer him right, let him spend the proceeds from his sales as he sees fit. The reverse of all this will send your boy to the city at an early age.

NEWS OF COUNTRY LIFE IN THE GOLDEN WEST

HORTICULTURE.

Orosi reports unusually good fruit crops.

Redlands reports many new orange groves.

8 and 9 cents is being offered for dried apples.

The fig crop in all parts of the State is a good one.

Dinuba has purchased and is planting a ten-acre park.

This season will be a crack-a-jack for California lemons.

Orange packing in the Porterville district is about ended.

Some Orosi vineyardists are now sulphuring the second time.

Sonoma County will dry a large quantity of blackberries this season.

The Whittier Citrus Association shipped 14 carloads of Valencias last week.

Peach growers around Marysville are selling their crops for $60 per ton f. o. b.

An Azusa grower has Oregon Long blackberries which are really long—2½ inches.

From 103 young Valencia trees an Orosi farmer sold $910 worth of oranges last week.

Many orchards and berry patches around Visalia have already been killed by the floods.

Late rains, without frosts, have insured a fine yield of wine grapes in the Sonoma Valley.

The price of blackberries is very low compared with other fruits in all parts of the State.

On account of an excess of wet weather grape growers are using lots of sulphur on their vines.

This season's high prices has already caused a considerable acreage to be planted to citrus fruits.

Last week's hot spell, which seemed to be pretty general all over the State, has ripened up apricots very fast.

Los Angeles will have a flower show in November, and Santa Barbara two, one in August and one in October.

Two Toluca men sold their peach and cot orchards last week for $300 per acre, retaining the present crop.

There is a persistent rumor that will not down that something will happen to the Citrus Union in the near future.

Two orchard owners in San Bernardino County have each received $25,000 from 60 acres of oranges this season.

Christian Colony, in San Joaquin County, shipped Alexander peaches and Abundance and Climax plums ten days ago.

The hot weather has caused a shortage of fresh fruits at many points, though ripening has been hastened by the heat.

The Taylor Seed Co., of Glendale, reports many European orders for California grown seeds. One of considerable size was received on Tuesday from Paris.

The Toluca fruit growers sold their peaches for $30 per ton for free stones and $37.50 for clings. The crop is estimated at 2000 tons.

At Mountain View buyers are offering $50 to $60 per ton for green apricots and 12 cents per pound for the dried, and no fruit in sight.

Brawley has a new melon known as Burrell's Golden Gem, which it is thought will displace the Rockyford, being just as good and much superior in size.

AGRICULTURAL.

Brawley is shiping Kaffir corn.

Melon aphis has been bad on the desert.

The Sacramento region had a rain last Friday.

Placer County had still another rain on Monday.

Salinas marketed her first threshed barley on the 14th.

Brawley shipped the first car of melons on the 12th.

Lancaster reports a most unusual crop of hay and grain.

Traver is the center of a large potato district this year.

Imperial Valley melon growers are calling for more pickers.

The Sonoma County grape crop is fine, with prices "way up."

Holtville expects to market 300,000 crates of melons this season.

Potato blight has appeared at Blanco in Monterey County.

16,000 sacks of grain were received in Sanger one day last week.

The Coachella melon acreage is about double that of last year.

300 sections of farm land are covered by the return of Tulare Lake.

El Cajon is bragging about a head of cabbage which weighs 33 pounds.

Coachella shipped her first car of melons just one day earlier than last year.

Orosi farmers are using Indians in their hay fields with satisfactory results.

Mexican canteloupes were on the Eastern markets with the first from California.

A crate of watermelons from the desert sold in Los Angeles on the 10th for $28.

The Mound Farmers' Club (Ventura County) will picnic at Casitas on Saturday.

Sanger, in Fresno County, claims the honor of harvesting the first grain of the season.

Kings River and Tulare Lake are highest for years past and many crops have been destroyed.

One Perris rancher is harvesting 60,000 sacks of wheat and 20,000 sacks of barley from 12,000 acres.

Watermelons have ben ripe on the desert for several weeks but not in sufficient quantities to ship.

Cantaloupes are getting to be within reach of the ordinary pocketbook, but watermelons—"nuff sed."

The Imperial Valley's biggest crop is not melons, nor is it sold; it is alfalfa, and it is all home fed.

New potatoes are not plenty, the early crop is exhausted and the blight is catching many later patches.

"Dinis" Kearney, who says he was cousin to the late M. Theo. Kearney, would like some of that Fresno land.

The Riverside Chamber of Commerce is running excursions from that city to Coachella to view the canteloupes.

Farmers around Fairmount, in the Antelope Valley, are complaining of damage to their wheat by the grasshoppers.

The next meeting of the Corona farmers club will be held the second Tuesday in July at the home of Mr. J. F. Merchant.

Farmers around parts of Tulare Lake are offering half their crops to anyone who will haul and stack it back a mile farther from the water.

The first shipments of canteloupes to New York netted the growers about 30 cents apiece for melons just big enough to taste. Talk about "getting money from home."

On account of the beans not being able to get through the crust formed by the rains, a heavy acreage will have to be replanted in many sections. Fillmore reports a heavy loss.

An Oroville news items states that the removal of the U. S. plant gardens from Santa Ana to Chico was on account of the superior soil at the latter place. Soils had nothing to do with it; at both places the soil is all that could be asked and will raise anything, even a row, as events have proved.

LIVE STOCK.

Stock feed along the upper Tulu is best in many years.

Black bass are unusually thick at Marysville this year.

600 head of cattle were shipped from Dinuba last week.

The Kings County Poultry Show will be held December 19-22.

The Healdsburg wool sales last week brought 25 cents per pound.

The Novata cheese factory shipped 25,000 pounds one day last week.

Escondido had a lively egg market last week, prices going up to 24 cents.

Petaluma has some active professional poultry thieves just at present.

During May the Downey Creamery handled 310,572 pounds of butter and made 7,470 rolls.

Tens of thousands of sheep have been lost by floods in Montana during the past ten days.

Sawdust from the mills is so thick in the river above Oroville as to completely destroy the fish.

Unusual cold weather has resulted in the loss of many recently sheared sheep in the mountain districts.

Butter has gone up in the markets of Los Angeles and vicinity, amounting on local creamery to five cents per roll.

The price for salmon this season is 3 cents per pound for all sizes, and over 100 boats are at work around Monterey.

All sections of the state report an increased and increasing supply of eggs and we may look for lower prices immediately.

Northern eggs are pouring into the Los Angeles market and on account of the hot weather many are only fit for presentation to the vaudeville stage.

Tuesday was wool sale day at Cloverdale and there was a large attendance of buyers. Much wool was offered and the highest price paid was 25 cents per pound.

At the 21st annual meeting of the Holstein-Friesian Association of America, held at Syracuse, N. Y., June 6th, Hon. R. M. Hotaling of San Francisco was elected one of the vice-presidents.

Croakers in San Diego County and elsewhere predicted no honey because of continuous damp, cloudy weather and no blossom, but the sages have now began to blossom most profusely, and a heavy yield of honey is certain.

LINER ADVERTISING

Advertisements in Liner Column will be charged 1¼ cents per word. No advertisement taken for less than 25 cents. Eight words to a line.

LINERS

REPRESENTATIVES WANTED IN every county to sell Parafelt Rings for Mason jars. The only absolutely sure and sanitary sealing ring made. Big money for hustlers. Write to T. S. Wilson, 1357 9th Ave., E. Oakland, Cal.

ARE YOU INTERESTED IN FRUIT CANNING? We have a book free describing six sizes of canners for the ranch or small factory, ranging from $10 to $125. Send postal with address for it. W. S. Ritchie, Corona, Cal.

BUFF LEGHORN HENS (J. W. MILLER strain of Freeport, Ill.) One and two years old $12.00 per doz. Cockerels 75c to $1.50 each if ordered before July 15th. Adress D. F Fryer, Rural 4, Santa Rosa, Cal.

HEALTHFUL VEGETABLE COOKING oils, free from disease. Inexpensive From corn, cotton and olives. Tiny samples 1c each. Also honey and olives. Address W. S. Ritchie Corona, Cal.

BLUE ANDALUSIAN EGGS FOR HATCHING, from three noted strains, $2.50 and $3. Incubator lots $7.50 to $15.00 per 100. Mrs. T. R. Griffith, 3111 Walton avenue. Los Angeles.

WANTED—OVER SIZE LEMONS. GASoline Engine for sale, cheap. Gray, Cook & Co., Riverside, Cal.

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4%

Those who are saving in the Present will be the Capitalists of the Future.

The simplest, surest and most profitable way to save is to open an account with this Bank.

Your dollars will be interest-bearing — we pay 4 per cent. on every dollar — compounded semi-annually.

Guard your future — protect it with a financial shield.

Remember that this Bank has the largest Capital and Surplus of any Savings Bank in Los Angeles — there must be a reason.

GERMAN AMERICAN SAVINGS BANK
223 SOUTH SPRING STREET.

BRANCH: MAIN AND FIRST STS

Live Stock and the Dairy

BY MRS. MINNA. E SHERMAN, FRESNO, CAL.

SORGHUM.

Now why should sorghum be grown in California will be asked? For many people here think that alfalfa is the one standby for the dairy man. So it is, yet sorghum comes in well as a catch crop and as a means of giving a cow a change of food. It is cheap, the seed is always readily obtainable and it never fails if it has the slightest chance to grow. One disadvantage to it is that on thin lands it exhausts the fertility rapidly, but hardly more than any other crop that produces a like bulk of growth. It is not an uncommon thing to harvest three or four cuttings for soiling, or hay, from a sorghum field in a season, for it grows early and late until a severe frost takes it, or until it is plowed up

The non-saccharine sorghums are objectionable, as the Kaffir group will hardly pay on heavy land, as it is too expensive to clear the land from the heavy, stubborn roots Indeed, it takes a good four-horse team to turn them out of the ground

Sorghum stands alkali better than corn and will produce on land that will only grow sugar beets The forty acres reclaimed by the government from alkali by under-draining, ten miles from Fresno, grew sorghum among the first crops after it was washed and before it was free enough from alkali to grow wheat Old grain fields worn out from years of cropping to wheat and barley produce good sorghum crops as it roots more deeply and reaches fresh soil unimpoverished by the cereals

The soil should be plowed deeply and made fine before the sorghum is sown In California the most successful growers no longer attempt to sow sorghum broadcast, but drill it in with a corn planter in rows two or three feet apart, making it very close in the rows to ensure the stalks being slender and tender. California sorghum must be cultivated or else such weeds as mustard, sun flower, cockle bur and "ramrods" will outgrow the tender sorghum Usually an irrigation is given to the sorghum each time it is cut, this starts it to growing at once, for it loves heat and only requires a drink of water to rush up again in a hurry, usually only four weeks need elapse between the cuttings after the warm weather begins. As the seed is sown thickly it requires about forty pounds to the acre when drilled in. This makes it thick enough to have the stems slender and tender, making it quite different from the coarse heavy stalks often grown for fodder, these latter the stock throw around and waste as they do not care for them.

The seed can be sown from April to July, the longer the crop is on the ground the more frequently it can be cut. The principal use for sorghum is for soiling. It is cut each day with a mower set high enough to miss the first joint, and loaded onto a wagon and let stand in the field until the next day, when it is hauled to the cows. The load thrown off, the wagon returns to the field, the horses are put on the mower and the sorghum is then loaded and left until the following day before feeding. As a further precaution against bloating, the sorghum is widely spread over the field so that a cow must walk along for a distance to secure a full meal, and cannot fill up standing in one place. The cutting for soiling begins when the sorghum has made three joints, when two only are cut and the lower one being left; if it is cut below this point it is very slow in starting into new growth. If it is not cut until it heads it has a greater feeding value when headed; still the loss in amount of herbage produced and in the slower starting again into new growth will more than offset the advantages gained of increased carbohydrates. The young leaves have more protein than the matured plant, to further offset the seeding loss. Cows are like ourselves in craving a juicy green food in the summer time and will give better results on this form of food than on grains of which the actual chemical analysis shows a greater food value, the reason being that they eat more freely of it and have an increased assimilation.

Sorghum makes good hay and is easily cured if raked after it has lain in the windrows twenty-four hours, and put into small cocks, these are opened up if the hay heats and the curing goes on slowly; after a week or ten days it is cured without becoming dried up with the heat, for so much hay sold is really only woody fiber with all nutriment burnt out of it by the sun bleaching it has received.

The making of sorghum hay saves labor for it is heavy to handle while green—about, say five to one. I can only give this as an opinion as I have only made sorghum hay a few times when I had a little more than needed for soiling purposes. The hay can be used for thatching, when I had more cattle than I had shelter for during the rainy days and nights, a rough shelter of poplar poles was run up and the sorghum hay stacked at one side and on the ends and also a light covering over top of the hay, made them very comfortable on windy nights. They soon found it good and promptly ate themselves out of house and home. Sorghum far outyields common corn when used for soiling, for it can be cut two or three times and yet have time enough to make a crop of seed. In the silo it is apt to be too sour, this can be obviated by letting it go until the seeds harden a little and then cutting it into the silo with green alfalfa. While I have not an analysis of the food value, we have found it an excellent feed when made one-third alfalfa. As mixed the cows are crazy for it, they relished this mixture more than either straight alfalfa or straight sorghum silage.

The cured hay from a good sorghum field sown in drill rows will average about six tons to the acre, this is less than if sown broadcast. Now how much soiling has it furnished to us? Here on the Minnewawa where the land is heavy and the water abundant an acre of well set sorghum will furnish twenty cows for twenty days all they can consume of green food. One year fifteen acres carried two hundred and fifty cows from June 28th to August 20th, giving them all the green food they would eat, and often leaving some pickings for the colts. The sorghum of this field then matured and furnished some material for the silo filling in October The entire fifteen acres was cut over twice for soiling. The land had been heavily manured the fall before and laid without a crop until spring, when it was put into order and the sorghum sown on it. The seed was drilled in in rows and the work of seeding was completed on April 14th. The manuring pays well, though a crop can be grown without it.

COW'S FALSE TEETH.

Editor Cultivator:—I recently purchased an old cow. I now find that she has lost all but three of her incisors, two on the right side and one on the left, the cavities where the other teeth were do not show. Could false teeth be obtained for her and secured in her mouth? Or would it be better to pull these remaining teeth? She cannot eat very well. Please reply through the Cultivator.—H. M. McK.

We viewed this question of the "calf" as ways and means of helping the old "cow" as of sufficient moment to call others in council and here by present their several suggestive remarks as full of cheer.

1. "This is certainly a serious case and I am glad to see you are so full of loving kindness to this dear sister. The use of mono-oxide gas would be humane if it is decided to remove the remaining teeth. There is a better course, however, for owing to the facial disfigurement of sunken cheeks, I should certainly advise bridge work in gold. This would only cost $3000 to $4000 and would preserve the beauty of the jaw lines that Madame will still be able to grace society. This cow will be a new development of the dual purpose idea——more valuable when dead as a gold mine than when alive as a butter producer."—Mrs. M. E. S.

2. "In reply to your first question regarding your obtaining false teeth for your old cow, I beg to state that this is entirely possible, but you will have to have them made to order. Any first-class dentist in Paris or London can make them so that you can not tell the difference between those incisors now remaining in the cow's mouth and the false ones. After you receive these teeth put the cow under the influence of chloroform, pry open her mouth, and insert the false teeth in the old cavities. If you cannot find the old cavities make new ones with a hatchet and then get a small boy, or your wife, to hold the teeth in place, always why the cow's jaws are in motion. If the cow objects kill her."—B. L. (Manager.)

3. "Take her to Bartlett Springs. They say if you soak a cow's hide in the water there the cow comes to fill it; it certainly should make teeth to grow. Failing in this rig up a silage cutter in her mouth and gear it to her tail, so when ever she switches the tail the cutter chops the feed."—S. A. (Foreman.)

4. "Get a rubber tube long enough to tie to her mouth and insert a milking tube into a teat and start her up prepared to feed herself."—Mrs. C. (Housekeeper.)

5. "Here is a case to practice Oslerism on."—M. E. C.

6. Last of all comes the "wise man" with this remarkable piece of scientific writing: "Carefully pry open the mouth with a cold chisel and examine the alveolar processes and exclude the existence of pyorrhoea alveolaris. This should be done under cocaine anaesthesia, and menthol spray. See that the structural dentine of each tooth is intact and that the laminated structure and the pulp is sound. The missing teeth are probably worn away by eating grass on sandy land. When stumps of these missing teeth are found, bore into each one, and in the hole anchor a pivot tooth, which will make the cow as good as new. When the job is

Sharples
TUBULAR
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BUTTER PER WEEK

Barnesville, Ohio, June 20, 1905: We were milking ten cows May 19. That day we took a Tubular separator for trial. **We used it one week and got 86 pounds of butter that week. The week before** we used it, we got only 65 pounds. **The week after** the agent took it away we got only 64 pounds. We felt we ought to have it. Later we arranged to buy it. We recommend the Tubular to anyone interested in cows. It surely will pay any one to buy a Tubular.
(Signed) LONA and C. W. ACTON.
Write for catalog Y-260. It explains fully.

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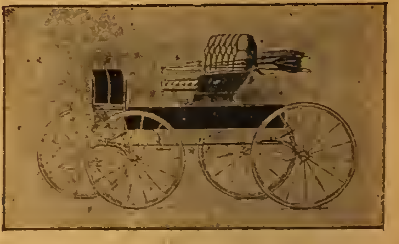

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Will cool 45 gallons of milk per hour to within two degrees of temperature of water.

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As a **HUMAN REMEDY** for **Rheumatism, Sprains, Sore Throat,** etc., it is invaluable.

Every bottle of **Caustic Balsam** sold is Warranted to give satisfaction. Price **$1.50** per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.

Advertising Column for Members
OF THE
JERSEY BREEDERS ASSOCIATION
OF SOUTHERN CALIFORNIA

Organized for the general advancement of Jersey interests, to extend knowledge of their superior merits, for the mutual benefit of members, and to increase the profitableness of one of the State's greatest industries. Breeders are requested to unite with the Association.

BULL FOR SALE

Having sold my ranch I am forced to sell Golden of Biltmore. 60082, a grandson of Golden Lad's. Golden of Biltmore is one of the best, ***If not the best*** sire on the coast, several of his daughters less than two years old selling for over $200 each. Highest bidder for next sixty days takes him. If everything is not just as represented, I will give anyone the ***bull free of charge. I sell on merit.***

C. S. Burgess, Riverside, Cal.

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—ST. LAMBERT OF RAMONA, No. 62633,—
heads the Ramona Herd of Registered Jerseys of
Geo. W. Thomas, Riverside, Cal.

For Sale--Registered Jersey Bull Calves

About 6 months old, solid color animals and first-class in every particular. Out of as fine stock as can be found in this State. Tested dams. Detailed information on application. Address or call any afternoon.

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Office, 205 Tajo Bldg., cor. 1st and Broadway, Los Angeles, Cal.

The Whiting Jersey Stock Farm Co.

Have moved their herd of Jerseys from San Bernardino, Cal., to the famous Imperial Valley, and hereafter their post office address will be Heber, San Diego Co., Cal., from which they will conduct all their business. Abundant green feed every day in the year will be of great advantage in the best development of our young stock.

Whiting Jersey Stock Farm Co., Heber, San Diego Co., Cal.

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Leffingwell Rancho, Whittier, Cal.

Service bull "SARGENT FOX," 64833. Bred on the Island of Jersey. Sire, the great Flying Fox, that sold at auction for $7,500. Dam, Miss Sargent, reserve winner over Jersey; winner of seven first prizes and five championship cups. "One of the grandest cows the island has ever produced."

VENADERA HERD
. . OF REGISTERED JERSEYS

For Sale, yearling bull Ruth's Gordon King, No. 72360 A. J. C. C. He is of richest breeding on both sire and dam's sides. Also three richly bred heifer calves by Marigold's Exile King, from cows that are good yearly producers. For particulars write

GUY H. MILLER, RIVERSIDE, CAL.

Oakhurst Jerseys

Sons of imported Golden Marquis out of prize winning and tested dams. for sale.

L. Bradbury Duarte, Cal.

Kings Victor King of St. Lambert

At head of herd. Young stock for sale.

H. N. WILLIAMS COMPTON, CAL.

completed feed on soft food for three weeks, such as asparagus tips and alfalfa blossoms, and cleanse the teeth night and morning just before milking time with a clean new steel file."

STILL USE CHURNS.

"The chances are ten to one or better," said a woodenware man, "that the butter you buy at the grocery store now was made in a creamery, for the great bulk of the butter consumed in this country is now made in milk establishments. But there is still some butter made by hand and we still sell churns right along.

"The greater number of these now sold are of the cylinder type, operated by a crank, turning within the churn a wheel with paddles, sometimes like the paddle wheel of a steamboat; but we still sell, as well, churns of the old-fashioned dasher type, such as their grandfathers used before them. I might add that the old-fashioned dasher churn is still, as it has always been, painted blue.

"Who still buys these old-style hand churns in the day of machine made butter? Why, so to speak, the oldest people, and the most modern.

"They are bought by small farmers keeping only one or a few cows, who naturally continue to make their own butter, and who make it, of course, with a hand churn. Some of these farmers might make even more butter than they would require for their own use, and the surplus they would sell, as they would their surplus eggs, to the country store.

"And you would find larger farmers, too, farmers perhaps keeping many cows and selling the bulk of their milk to a creamery, still continuing to make the butter that they needed for themselves, and making it, as they have always done, in a hand churn.

"And such churns are sold to people living in suburban or country homes and keeping cows, who make their own butter because they prefer to, anyway, and they are bought by various people, everywhere, who want sweet, or unsalted, butter, and who make it for themselves in hand churns.

"We export churns to the West Indies and South America and to New Zealand and Australia, and to dairying countries in various other parts of the world."—Washington Post.

CREAMERY CAUSES PERMANENT PROSPERITY.

Years ago when the railroads shops were removed from Tulare, there was a general feeling of gloom in the community, and many there were who declared, and who confidently believed, that Tulare would never recover from the blow. And for a time the Southern Pacific's payroll did exert hurtful influence on the business interests of the town. It was a good thing, that payroll, and we all grieved to see it go, but the writer was wondering this morning how many of our people would be willing to give up the two creameries now here if by so doing we might have the shops back again. As stated in a recent issue of the Register, $17,488 represents the aggregate of the payments made during last month to the farmers who make Tulare their trading point. That is a payroll worth having isn't it? And the cheering promise is that these figures will grow from month to month, while, better still, the permanency of this money-distributing business is assured. Nobody can take it away from us.—Tulare Register.

Veterinary Instruments, Black Leg and Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

JERSEYS AT ST. LOUIS.

The managers of the Louisiana Purchase Exposition, held at St Louis, Mo., in 1904, inaugurated an exhibition of dairy cattle in the form of a "dairy cow demonstration," open to cows of all breeds. Representatives of the various breeds and of the Exposition met and drew up a set of rules governing the demonstration, and Prof. E. H. Farrington of the Wisconsin Agricultural Experiment Station was selected by the Exposition management to superintend the test and carry out the details.

Animals representative of the Jersey, Holstein-Friesian, Brown Swiss and Shorthorn breeds were entered in the demonstration—twenty-five Jerseys, fifteen Holsteins, five Brown Swiss and twenty-five Shorthorns, one of which latter died during the test. The period of the demonstration was 120 days, from June 16 to October 13, inclusive.

Each cow was weighed on five consecutive days at the beginning of the test and also on five days at the end, weighings were taken as the weights of the cows at the start and the close of the tests respectively.

The cows of each herd were fed and cared for by superintendents representing the association of the breed to which they belonged, and these superintendents, or their assistants, indicated each day the amounts and kinds of feed to be given each cow.

Clerks appointed by the Exposition management weighed out the quantities of the various feeds supplied each cow daily, as requisitioned by the superintendents, also weighed the milk and took samples of same, keeping accurate records of feed and production.

The values of the feed stuffs were fixed by the official committee of the Exposition, and these values were used in computing profits made in the test. The cows were fed and milked three times a day. Each milking was weighed and sampled, and a composite sample of the three milkings was tested. Each sample of milk was tested independently by two chemists. Butter was valued at 25 cents per pound, solids not fat at 3 cents per pound, and butter fat at 30 cents per pound.

The cream was not churned. The amount of butter being credited each cow was computed from the percentage of fat in her milk and by the use of "overruns" based as follows: The skimmed milk is 85 per cent of the whole milk; the skimmed milk tests one-tenth of one per cent fat; the buttermilk is ten per cent of the whole milk; the buttermilk tests two-tenths of one per cent fat; the butter contains 83 per cent fat.

The cows in the demonstration were entered in three classes, as follows:

Class A included herds and individual cows entered for demonstrating the economic production of milk for all purposes of dairying, each cow being credited with the total pounds of fat and of solids not fat in her milk at the prices quoted above.

Class C included herds and individual cows entered for demonstrating the economic production of milk and beef. The Jerseys were not entered in this class, and the Shorthorns were not entered in Class A.

All weighing of feed and milk, taking and testing of samples, checking and recording results, etc., were conscientiously and carefully made by experts employed by the Exposition management, under the personal direction of Prof. Farrington, so that he was afterwards able to write: "There is no fiction in these World's Fair records."

The awards show that the Jerseys won all the honors competed for the demonstration, with two exceptions: a Holstein cow attained to the fifth place in Class A and second place in Class B. As a herd the Jerseys led all the others.

Prof. H. S. Redfield of Columbia University, New York, writing on the St. Louis dairy demonstration, presents the following as important feature:

First.—It is to be remembered that the different breeds were represented by animals selected, not by opponents of the breed, nor outsiders, but by its advocates, men who knew its qualities, and who knew also the conditions of the test. We have, therefore, a perfect right to assume that the animals chosen were those believed to be the best calculated to demonstrate the merits of the breed; and no argument to invalidate the results of the demonstration is entitled to the slightest consideration which is based upon the proposition that a proper selection of animals was not made.

"Second.—Each herd was in charge of a man who was not only a believer in the particular breed of which the herd was composed, but was also

Cream Separators, all sizes, all prices. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

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POSITIVELY CURES
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High grade stock of best strains Young stock for sale.
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ANTHRAX
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Are given the preference by 80% of California stockmen because they give better results than others do.

Write for prices, testimonials and our NEW booklet on Anthrax and Blackleg.

THE CUTTER LABORATORY
Berkeley, California

a man of experience in feeding and handling animals of this breed to secure the best results. The kind and amount of food were entirely under his control, as were also the care and management of the herd, so that no valid claim can be made that any breed has failed because of lack of skill in feeding and handling.

"Third.—Although, as stated, the one in charge of a herd was allowed to feed such amount as he deemed best, and to make up the ration from different feeding stuffs according to his own judgment, a valuation of the different articles which might be used in a ration was fixed by the officials of the Exposition, who also kept a complete record of the kind and amount of food consumed, so that the final estimate of the cost of the products is made by independent officials, not connected with any breed, upon a fixed valuation of different feeds, applicable alike to all the breeds. It will, therefore, be entitled to be relied upon as correct, and as absolutely fair and impartial.

"Fourth.—As a record was kept by independent officials of all food consumed, so a record was kept of all products, including gain in weight; as the cost of the food will be estimated according to a fixed schedule of prices, so the value of all the products will be estimated in accordance with a similar schedule which is used for all the breeds. As the estimate of the cost of food will be entitled to full credence as correct, fair and impartial so will the estimate of value of products be absolutely reliable, and also the final and most important estimate of net profit.

"Since, then, in this demonstration, we have animals selected and cared for by partisans, but under an independent supervision, which gives us an accurate and impartial estimate of cost of food, value of products, and net profits, we have a perfect right to consider the results conclusive, as between the breeds, concerning all points which were fully covered by the test.

"The test will give important and conclusive evidence upon one point which is constantly overlooked, but which has a great influence on this controlling factor in the choice. I refer to the influence of the size of a dairy animal on economy of production. All who have given the matter study agree that the amount of food required for the purpose of sustaining life and repairing waste—for what is known as a maintenance ration—is in proportion to the size of the animal. That is, an animal weighing twelve hundred pounds requires much more food for this purpose than one weighing nine hundred pounds, and this food must be given before any return can be looked for in milk-pail or butter-tub. This difference in cost of a maintenance ration, when extended over the entire milking period of a dairy animal, is a large and important item.

A GRAND RECORD.

Editor Cultivator:—I inclose detailed statement of yearly fat estimates recently completed by two of our cows. These cows are both now entered in Class A of Registry of Merit, their records being much larger than necessary to make them eligible for Advanced Registry. Please emphasize the fact that these figures represent butter fat and that the estimated quantity of butter for the year can be figured by dividing the fat by .85, which will show for Rhyme a yield of about 534 pounds of butter and for Pedro's Landseer Beauty about 508 pounds. We consider the record of this latter cow especially good as it was made with her second calf. She will not be five years old till the 8th of December, 1906, and is giving this year a very material increase in milk over last, so that her yield will probably run up to 550 pounds of butter.

This makes five cows in our herd which have entered the Register of Merit, the lowest record being 411 pounds of butter fat in one year and the highest 497 pounds. There may be better cows together in a small herd, but it is up to their owner to prove it as we have done, at no little expense.

Our young heifers by Sargeant Fox are out of such cows and if they do not turn out extra well they will belie both their pedigree and their looks.

Very truly yours,

C. W. LEFFINGWELL, Jr.

(Mr. Leffingwell encloses certificate of the official test from the head office of the American Jersey Cattle Club in New York. The table is somewhat technial, in one column running into 10 decimals, making it impossible to reproduce in our types or we would gladly publish it, for no one on the Pacific Coast has done so much in the upbuilding of a high-class herd of registered Jerseys as has Mr. Leffingwell. We rejoice with him over this really brilliant record.—Ed.)

MISTAKES IN FEEDING.

Farmers are likely to make one of two mistakes in feeding their dairy cows: First in not giving them enough; and, second in not giving them a properly balanced ration· Farmers do not realize that a cow is simply a machine for the conversion of grain and forage into milk and butter, and that it requires about 60 per cent. of what she can eat to run the machine. If the farmer, therefore, feeds only 60 per cent. of her capacity, he is simply converting the cow into a manure factory instead of a butter factory. A butter factory should be run to its fullest capacity if possible.

Again, farmers do not always remember that the raw material for the factory must be of a character to produce the product required. The casein, which is the largest solid item in the milk, is an albuminous product, and therefore the cow should have a flesh forming feed, what we call a narrow ration as distinguished from "wide" or carbohydrate ration fitted for fattening animals. Much of the success of the dairyman depends on the proper balance of the ration.

Neither do farmers always remember that the balance of the ration as well as the amount of milk given is determined by the the quality of the milk she gives· There is no need of feeding a cow more than she can digest and assimilate. If she, however, gives a large amount of rich milk, she requires a somewhat different balance from the cow that gives a medium quantity of "blue" milk.

If your horse has sore shoulders, there is something wrong with his collar.

For Wooden Sole Boots and Shoes see O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

See Us for Sanitary Milk Bottles. O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

Profit in the Poultry Yard

BY MRS. A. BASLEY, HOLLYWOOD, CAL.

A TALK ON PLYMOUTH ROCKS.

"Which is the best breed of fowls?" is a question frequently propounded to me.

"The breed that you like the best," is my reply. "Any one, man or woman will succeed best with the breed he likes best. Fortunately there is a great variety of fowls, so one's choice can be almost unlimited."

"But I really have no choice and come to you for information and advice. Is there no favorite breed?"

"There is a favorite breed all over this country from Maine to California. It is the Plymouth Rocks."

"America for Americans" might be reversed in poultrydom and should in the opinion of the writer read "American breeds for the American people.' ' There are at present in the American Standard of Perfection three breeds, the Plymouth Rocks, the Wyandottes and the Rhode Island Reds. There are three breeds of Plymouth Rocks in the Standard, the Barred, the White and the Buff.

The American classes of fowls have been made by American breeders crossing and re-crossing different and usually foreign breeds for a purpose, generally for utility to increase the egg yield or for beauty of plumage or a larger and better development of breast meat. Yankee sagacity evolved these breeds and the first of them is the "Plymouth Rocks."

"Plymouth Rocks" was the very name given to this breed about 37 years ago. It is the result of several matings or crossings made some 40 years ago. I need not go back to discuss each mating which was deemed advisable, we have the product and are thankful for it. The interest in Plymouth Rocks is almost world wide, no other breed has awakened so much enthusiasm; to perfect it and beautify it more profound study has been given than has ever been devoted to any other breed and there is no variety the product of American skill and breeding, that one can put on the market of the world with so much pride, and none other is received from our shores by foreign fanciers with so much favor. Plymouth Rocks need no booming. They are what is called a "general fowl" bird. They thrive any where, are rapid growers, making, plump, juicy broilers at eight weeks and from that age up are always, if properly fed, ready for killing. They are a favorite with farmers and market poultry men, who breed this variety more extensively than all other breds combined. Utility and actual worth are the basis of this popularity, and make the Plymouth Rock a breed that will always stay with us.

The color of the plumage of the Barred Plymouth Rock is body color bluish grey, barred with narrow, paralelled lines of a dark blue that stops

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IF YOU WANT EGGS YOU WILL FEED NO OTHER

Used by all the largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the GOLD MEDAL at the St. Louis World's Fair for greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1604.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A Filcher, Commissioner.

And Now Comes New Reward for Merit:

Read the following telegram received from the Lewis & Clark Exposition at Portland:

"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

PETALUMA INCUBATOR CO.

Main Office and Factory, Petaluma, Cal., Box F. Los Angeles, 505 South Main Street

San Francisco Office and Salesroom, 33 Market St.

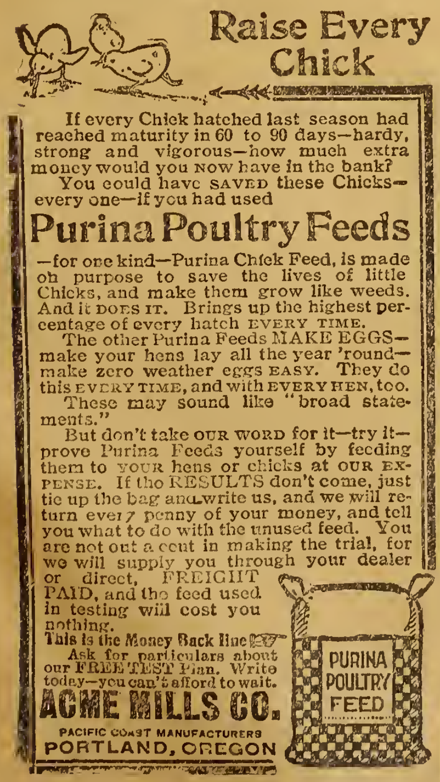
short of a positive black. By some the color is called black and white and by others blue. The coloring and marking as well as the shape of this attractive fowl have led to much discussion and earnest study on the part of fanciers, but all agree that the barring of the dark and light lines on the feathers shall run in straight, distinct lines throughout the entire length of the feather. The barring is somewhat smaller on the hackle and saddle feathers than on the other portions of the body. In beak, shank and toes deep yellow is the color coveted by the fanciers. In all varieties the comb is single with five serrations, is small or medium in size, wattles well rounded, earlobes red.

The typical Plymouth Rock is a compactly built, strong, but not a coarse boned fowl. Standard weights are for cocks, 9 1-2 pounds; cockerel, 8 pounds; hen, 7 1-2 pounds; and for pullet, 6 1-2 pounds. They are good layers the year round, and in winter they lay exceptionally well. The eggs are brown and average eight to the pound. They are good sitters and excellent mothers. Plymouth Rocks have been bred by the writer for 30 years with satisfaction and success.

The White Plymouth Rock is said to be a descendent of sports of the Barred. It is of the same form and weight, but pure white in plumage. It possessses all the excellencies of its popular ancestors. The difference in Standard requirements is on the color of plumage only. The white variety have the same yellow skin, beak and legs; the same bay eye and blocky build.

As a market fowl no one will question their superiority. A white fowl is an ideal market bird, especially when covered with bright yellow skin like the White Rocks, and when to these qualities is added an entire absence of colored pin feathers at all stages of growth, the excellency of this variety is further proved. There is no other variety or breed that makes better, quicker growth than the White Plymouth Rocks or that will stand harder or more concentrated feeding. They are good as squab or chicken broilers, good as roosters, good as capons, good as fowl. Through the whole range, from the earliest broiler age to that final fricassee, which generally comes with old age, they excel.

As egg producers I have never seen the equal of the White Plymouth Rocks. They lay at an early age and keep it up persistently, doubtless with this as with other varieties, much depends upon the family or strain and whether they have been bred to the laying habit. When I was in the business I shipped White Plymouth Rocks to all parts of this country and even as far as New Zealand and the Philippines, and in every case they were reported very satisfactory as layers. In the "National Stockman and Farmers'" egg contest, competing with 143 pens of Standard and crossbred poultry, the White Plymouth Rocks won first and third prizes with the remarkable average of 287 eggs to the bird in twelve months. This is, I believe, the banner record of any breed.



Raise Every Chick

If every Chick hatched last season had reached maturity in 60 to 90 days—hardy, strong and vigorous—how much extra money would you now have in the bank?

You could have SAVED these Chicks—every one—if you had used

Purina Poultry Feeds

—for one kind—Purina Chick Feed, is made on purpose to save the lives of little Chicks, and make them grow like weeds. And it DOES IT. Brings up the highest percentage of every hatch EVERY TIME.

The other Purina Feeds MAKE EGGS—make your hens lay all the year 'round—make zero weather eggs EASY. They do this EVERY TIME, and with EVERY HEN, too.

These may sound like "broad statements."

But don't take OUR WORD for it—try it—prove Purina Feeds yourself by feeding them to YOUR hens or chicks at OUR EXPENSE. If the RESULTS don't come, just tie up the bag and write us, and we will return every penny of your money, and tell you what to do with the unused feed. You are not out a cent in making the trial, for we will supply you through your dealer or direct, FREIGHT PAID, and the feed used in testing will cost you nothing.

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Ask for particulars about our FREE TEST Plan. Write today—you can't afford to wait.

ACME MILLS CO.
PACIFIC COAST MANUFACTURERS
PORTLAND, OREGON

At a farmers' institute of the University extension course I met a man who told me he has a pen of White Plymouth Rocks that with out forcing gave him 196 2-3 eggs last year. One of these hens in 110 days layed 105 eggs. In response to a question from the director he said that he is only a beginner, has been two years here, with the exception of a few White Plymouth Rocks has only common hens, has kept an accurate account of receipts and expenditures during the past year and finds that his hens netted him $1.25 per hen. This is doing well for a beginner's first year. He has had some hard experiences, but has succeeded in making a little money and gaining health. His hens laid 50,000 eggs last year and will do better next year.

A word to those who may contemplate buying and hatching eggs of this variety. Do not be disappointed if the little chicks hatch out a smoky grey, the greyest will develop into the whitest when they feather out. It shows their pure ancestry from the grey of the Barred Rock.

The Buff Plymouth Rocks are a beautiful bird. They have the same shape, weight and general characteristics as the other varieties of Rock. the color being the only difference. They should be a clear buff through out. I have found them to have the same pleasant, quiet disposition as the White Rocks, making them an ideal fowl for a city lot, but they did not lay as well for me as the other two varieties and the California sun was hard on their plumage, fading it out. Otherwise they are very satisfactory and the correct breeding of them is an interesting study.

* * *

Roupy Turkeys (Mrs., W. H., Hanford): Please let me know through the columns of your paper, what will cure turkeys of a swollen head. The old turkey hens have had it and now my little ones are taking it and I fear it will prove fatal to them. The head and neck are swollen and the eyes are at times swollen shut and seem to secrete a foamy watery fluid. Their nostrils seem to close and they breathe through the mouth. I wish to thank you in advance for some information regarding a cure for the dreadful disease.

Answer.—Your turkeys have the roup, it is very hard to cure them. The parent turkeys having it, the young inherit it from them. I think the best thing for you to do will be to grease the heads with carbolated vaseline one day, and the next with kerosene, alternate days. Then alternate days or nights give one pill of quinine, and one pill of assafetida. Give nourishing diet such as bread and milk with a little red pepper and an onion chopped fine every day. Also try to put them on new fresh ground where there will be no microbes of disease.

* * *

Sick Turkeys (Subscriber)—As I am a subscriber to your paper I beg to ask your advice as to the treatment of a disease which has affected my flock of young turkeys.

The symptoms are as follows: The poults become suddenly mopy; a mucous like substance exudes from eyes and throats of many, but not all. Are very poor and seem to be sunken about the eyes; but those that are not affected will be thrifty and healthy looking to the day they are attacked by the disease, about 30% will show signs of bowel trouble; mortality is greater during night than day. Post mortem examination shows liver to be normal in size although a greenish fluid is found on parts of it. The disease seems contagious among the poults ranging from age of one to six weeks but the older ones seem immune to the trouble.

They are kept free from lice by dipping mothers in napthal kali. There is neither any mites for coops are sprayed. The food is cracked wheat, cracked corn, boiled egg and occasionally curd.

Will you please give me your opinion concerning this affection in the next issue of your paper and oblige.

Answer.—Your turkeys are suffering from catarrh. They are taking cold either from damp ground, or draughty sleeping place, or they may be getting the air tubes irritated by the fumes of the napthal kali and these poisonous fumes are irritating the whole intestinal canal. I think this is probably the cause of it. Only dust with buhach, don't use napthal for turkeys.

Another thing, leave out the cracked corn and give them onion finely chopped and lettuce chopped every day in their feed, even if they are on free range. For those that are sick give milk to drink and feed bread and milk. See my reply to Mrs. W. H.

* * *

Mash Food (J. R. H., Arroyo Grande)—Editor Cultivator: Enclosed fine $1 in stamps for the renewal of my subscription for your paper to June, '07. I am very much satisfied with the Cultivator and think it the best paper of its kind on the coast.

Kindly answer me the following question in your paper. I am a young poultry man and raise between 400 and 500 hens a year in my yards in the last years. Now I want to increase my stock to about 1000 or 1200 laying hens. But there is one trouble for me in this. I fed my hens cooked potatoes, middlings and bran for their mash food with very good success, my little wife peeling the potatoes every day. That made lots of work but could be done by us for a smaller lot of hens. But I am afraid we cannot do it for 1000 hens or more. So I think I have to change our soft food and want to ask you whether you could give me the mixture of a good mash food. I feed for eggs only. In the morning I give my hens boiled barley, soft food at noon and grain in the night. Besides they get lots of green stuff, ground bones, boiled blood, grit and oyster shells.

Answer.—For a long time I fed potatoes in the mash to my hens, but I never peeled them. I washed them in a tub, and when they were clean I boiled them, and then mashed them skins and all. Sometimes the hens would leave some of the skins, but generally ate them all up. I had read that the skins of the potatoes contained nitrogenous matter and that human beings ought to eat them, so I thought they would be good for hens.

You might sometimes add some carrots or turnips to the mash.

If you have succeeded well with the mixture you have given them, keep to it. I would not advise any change only don't peel the potatoes.

Have the roosts in the back part of the poultry house where no drafts of cold air can blow over the fowls at night and give them colds. But be sure to keep windows and doors open as long as possible so the flock has fresh air to breathe at night as well as day time. Screens of inch mesh wire nettings should be used over window and door openings to protect the flock from noctural varmints.

Sloppy feed may be fed all right for hogs, but not for poultry.

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POULTRY RESOLUTIONS.

Education.—I will read the best poultry literature, and try to learn from those who are successful in the methods they practice; and will try to inspire myself with love for and enthusiasm in this vocation.

Breeding.—I will keep pure-bred stock of one of the laying breeds which best suits my taste. I will note which of my hens are the best layers, keeping a yearly record of the eggs they produce; and on their several records will mate these layers with cockerels from flocks with which the same care has been taken, and by this process get my eggs for hatching.

Environment.—As I want biddy to lay eggs in the winter, when the price is high, I will make her environment as near like summer as possible. I will build her house with double walls, having inner linings of paper, with a dead-air space between. I will have the windows made to let in as much sunlight as possible. I will place the dust box where she can take her bath in the sunshine, the nest boxes in a darkened place, and the perches low down, having underneath a box or boxes with legs. Biddy will do her best work when she has plenty of room and not too much company—not over 15 in the house, and at least 5 feet square for each.

Cleanliness.—I will keep the houses clean, the walls nicely whitewashed, and will protect the hens from lice and other insect parasites by the frequent use of insecticides and disinfectants. I will use plaster freely in the house, and daily in the boxes under the perches, and will remove the droppings often, and to some place where I may keep them in good condition to use as a fertilizer for my soil.

Food.—I will study to learn what the egg contains, and will supply the hen with all its elements. I will observe the kind of food she seeks for and eats when she forages in summer. She looks for grass, insects, worms, etc., with which to supplement her grain ration, and for grit with which to grind it; hence I will try to furnish all these things in the winter. During the cold weather, when she must stay in her house all day, I will plan to have her work for her breakfast, which consists of small grains thrown on the floor and deeply covered with litter, so that she may have a good appetite for her dinner, which is a warm mash made of different kinds of grains, bone meal, boiled vegetables and cut clover, so as to contain in the right proportions all the elements of the eggs; and I will feed her only what she will eat at the time. At night, in cold weather, I will feed her a little corn in the litter or other whole grain. I will supply her with green cut bone, meat, shells and grit, some kind of green food, pure drinking water, and skim-milk when I can obtain it. If she is confined in the yard in summer, I will feed her less grain, and will make a part of her food green cut clover, or, better, alfa fa, frequently plowing or spading the yard, so that she may scratch for insects. I will plant fruit trees in this yard for shade and food. When biddy is so well fed and cared for that she is happy and sings, she is then the "profitable hen."

Marketing.—If I produce the eggs for market, I will put myself in the place of the consumer, and sell him only the kind of eggs that I would wish to buy—eggs of good size, and will try to so maintain the standard of quality that there will be a demand for them at prices above market quotations.

Profit.—I will keep such account of the expenses and receipts that I will know my margin of profit. I will then know whether I am making a good profit; and if not, will look for the cause of my failure.—Country Gentleman.

GUINEAS ON THE FARM.

Guineas are perhaps the most profitable of all varieties of farm poultry; that is, when taken into consideration the small attention they require.

They begin laying in early spring, long before freezing is over, and, except when sitting and going with their young, they lay every day until the cold weather comes again in the fall.

The flesh even of an old guinea is tender and delicious when properly cooked, resembling wild game, while there is nothing finer than a young guinea broiled or fried after the manner of the old Virginia receipt. When dressed, they are round, plump, and shapely, with small bones and large breast, thus affording a large proportion of the choicest meat. Their eggs, though somewhat smaller than hens', are rich and good flavored, especially for making cake.

When the number of males and females in the flock are equal, they will mate in pairs; but should the number of hens be greater, several hens will go with the same cock, and all the hens have the same nest. This is to be preferred, as the nests are more easily found, for guineas are very cunning about concealing their nests, hiding them in retired spots among tall grass and bushes, or under wide dock leaves. After laying, the hen raises her voice in a shrill chatter which betrays the locality of her nest, though, as a rule, whenever you see guineas frequenting a certain spot between the hours of 10 a. m. and 2 p. m., there you may confidently expect to find a nest.

It is an old superstition that guinea eggs must be taken from the nest with a silver spoon, else the nest will be abandoned. I do not insist upon the silver spoon, but I do know that it is safer not to put your hands in the nest if you want them to keep on laying. Half a dozen eggs or more should be left as nest eggs.

Four weeks are required for incubation, and, unlike other chicks, the little guineas break the shell nearly every one at the same time. They are all hungry, too, and before the down is dry begin pecking at each other's eyes and feet, or trying to swallow tiny bits of egg shell. They are sprightly little things, and about the prettiest of all young fowls, but until well feathered are very tender and delicate. For this reason it is best not to allow the hens to sit in June or July, so that the little ones may be reared in warm, dry weather.—"Farmer's Daughter," in Country Gentleman.

A COUPLE OF POULTRY YARD CONVENIENCES.

At a meeting of the Southern California Poultry Breeders Society in Los Angeles last week, Mr. W. W. Bliss, of Duarte, exhibited the working of a couple of conveniences for poultrymen which caused considerable favorable comment and led many to express themselves as desirous of using them in their yards. Mr. Bliss has no patent on these appliances and offers them for the "good of the order."

The first he illustrated was a feeding arrangement made from a five gallon oil can and is used for feeding grit, cracked bone, charcoal, shell or other such feeds which it is desired to keep before the hens at all times. As the cost of the appliance is only a nickel, for which Mr. Bliss says the cans can be bought in most places, it is certainly within the reach of all poultrymen. The manner of making it is to cut out three sides of a square or oblong opening with the ordinary straight cutting can opener. This opening is about three-fourths or perhaps half of the size of the full side of the can. As the three sides of the opening are cut, the "flap" which has been cut out is caught with the fingers

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Is true, and especially so when the birds are fed on A. C. W. Egg Food. Take notice of your fowls after feeding A. C. W. and see if this statement is not correct. You will find the plumage shines, feathers lie close together, no rough or bedraggled appearauce. This shows the birds are **healthy.** A horse with a slick "hide" is healthy; the same way with a fowl. Yours truly.

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and bent outward, nearly at right angles. Then when the can is partially filled with charcoal or grit, or, with both if a partition is placed in the can, it is turned with this cut opening to one side so that the chickens may walk up and eat, the flap which has been raised is uppermost, forming a roof to protect the contents of the can from the rain.

The other appliance was an egg tester, and while much larger than the ordinary small lamp tester and somewhat more complicated in the making, yet is so much more effective and gives so much stronger light that a few words regarding it may be of value. To make this, get the ordinary size wooden shoe box standing on end and making a hinged door of the lid which swings horizontally. The common Rochester lamp is used for the lighting behind which, or rather slightly to one side of the center are placed two glass reflectors centering the light on a mirror fitted in one side of the box, opposite the hinged door. The mirror is set at an angle of possibly forty-five degrees and reflects the light to an egg shaped opening in the projection of the box above. When the egg is placed in this opening this light is so strong that daylight work may be done in testing its eggs from incubator or hen.

POULTRY POINTERS.

Don't cross two pure varieties, but cross two strains of the same variety if you want vigorous stock and you will then have pure-bred fowls, as well as vigorous, healthy stock. Pure-bred stock is without doubt the most profitable to keep and health and vigor can be just as easily obtained by crossing two specimens of the same variety that are not related to each other as by crossing two distinct varieties and by keeping only one variety the flock is more uniform and more easily handled.

Beware of overcrowding the poultry houses. If sufficient room is not available for the flock on hand, sell off part of the flock or else build more houses for them. Most flocks would be greatly benefitted by culling out the old hens and late hatched pullets anyway, and as lumber is so extremely high, it will pay most farmers best to cull their flocks down to what they have comfortable house room for Four square feet of floor space for each fowl is the lowest estimate if one expects any return from the hens during the winter, and five or six square feet is better.

Don't expect eggs in large numbers if the water supply is short, for eggs are largely composed of water.

A broiler is a chicken which weighs two pounds or under, and a spring chicken weighs from 2 to 4 pounds.

Another thing to remember in selecting eggs for hatching is that sick or over-fat hens do not lay very fertile eggs.

Leg weakness, soft eggs, egg-bound and poor hatches can nearly always be attributed to overfeeding and an extra fat condition of the hens.

Some poultrymen claim that the very strongest hatching eggs come from hens that had a judicious amount of green bone in their bill of fare.

Mites in the chicken house occasionally are no disgrace, but it is a disgrace to leave them there after they are discovered, when they can be gotten rid of at such little cost.

The raising of guinea fowls is being advocated by the agricultural department and dealers in market poultry. The demand for them is said to be good already, and increasing as rapidly as epicures become acquainted with the delights of the dish.

A HEN'S PLAINT.

A poor, scrawny hen, with drooping head and sadness in her eyes, stood on an old sugar barrel in the poultry yard and soliloquized as follows: "Times are not what they used to be in California. My ancestors told me that in the forties a good looking hen like me would sell readily for from six to ten dollars; today I, even in my younger days when fat and saucy, would not have brought more than thirty cents. Only a few years ago, my great grandmother laid eggs that sold for $1 apiece. She was fed on wheat that cost sixty centy a pound, bread crumbs made from flour sold at $100 for a fifty pound sack. Every cackle indulged in by my great grandma was worth one dollar. Today, I am fed on wheat worth less than a dollar per sack. I have to cackle a whole month for twenty cents, and my eggs sell at three dozen for a quarter, and if I fail to lay them even at that price, my meatless carcass is sold for twenty or thirty cents to the tamale woman, who stews me in pepper and sells me in a mummified form at three tamales for a quarter. Verily and a hen's life is not worth living.—Owl.

WORTH TRYING.

In running an incubator we have found it a great saving on oil to keep a thick pad or carpet on floor of machine and also on top of machine. I use several thicknesses of old soft blanket on top of my machine and find that I can run with much less oil than when I do not use the cover. If your machine is one having a regulating device on the cover, of course this cannot well be practiced without interfering with the regulator. My machine has not. Also you will need to cut a hole in the carpet you use inside on floor if your machine is ventilated from the bottom as mine is. If you want to test the matter to see how much heat is kept in by a heavy covering on top of machine just lay a sofa pillow on top of machine a few hours then slip your hand under the pillow and see for yourself how much heat comes up from top of machines that could as well be saved.—Ex.

WHOSE FAULT IS IT?

The farmer who says hens are a nusiance usually speaks the truth as far as his individual experience has gone. His plan, or rather his lack of planning for them,renders them a veritable nuisance. Any other farm stock neglected in the same way poultry has been on the average farm would also cease to render a profit to their owner. The farmer or poultryman must provide the favorable conditions and the flocks will see to it that the labor has not been in vain. Each year more farmers are waking up to the fact that there is money to be made from poultry and as a consequence are taking more and better care of their stock. And with this new interest in the flock comes the natural desire for better bred stock.

WHY DON'T THEY LAY?

Judging from the many inquiries coming to hand there are many flocks of poultry that are sorely taxing the patience of their owners. Why are they not laying, and how to make them lay, are the questions. Were it not for the fact that a vast majority of the flocks might thus be described, the high prices for fresh eggs that have ruled for two months would seldom or never occur. Now and then a flock proves to be an exception, and provides eggs every day in the year. This, however, is generally the result of skilful management and care. It is when hit and miss methods are not tolerated. It is when the poultry is recognized to be the equal in importance to any other factor entering into our daily cares. It is where intelligence and common sense were exercised in the care of the parent stock, as also the eggs from which the flock were hatched. It is where the chicks were carefully brooded and fed on a balanced ration (a variety), that produced a good all-round development. It is where the runts and poorly developed ones (and sometimes there are many such, especially in incubator hatches), are separated from the choicest birds—those of thrift and vigor—and not permitted to eventually contaminate the flock with vermin and disease. It is where the cockerels and pullets were separated when the first and smartest bird tried first to crow, and the pullets were given their permanent and separate quarters and treated very much as the laying hens should be cared for.—H. L. Blanchard.

MORE USE FOR EGGS.

A mustard plaster made with the white of an egg will not leave a blister.

A raw egg taken immediately will carry down a fish bone that cannot be gotten up from the throat.

The white skin that lines the shell of an egg is a useful application for a boil.

White of eggs beaten with loaf sugar and lemon relieves hoarseness—a teaspoonful taken once every hour.

An egg added to the morning cup of coffee makes a good tonic.

A raw egg with the yolk unbroken taken in a glass of wine is beneficial for convalescents.—Medical Record.

S. C. WH. LEGHORNS Eggs, $1.50 per setting, $6.00 per
and I. R. DUCKS 100. Send for illustrated catalogue
John P. Boden, 638 Second St., Watsonville, Cal.

Blue Andalusians
At Los Angeles, 1906, our strain in a class of 68 Andalusians with 16 birds won more firsts than all our competitors combined. Eggs, $1.50 and $2.00 per 14.
Blue Ridge Poultry Yards, 128 Avenue 32 Los Angeles

SHADE'S **Rhode Island . . . Red Farm**
Automatic Chicken Feeders.
Shade's Egg Food sold to consumers only.
San Bernardino, - - California.

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Eggs for sale from Prize Winning **Rhode Island Reds.** Send for circular. **W. Frank Greenleaf, Santa Ana, or 404 H. W. Hellman Building, Los Angeles, Cal.**

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Prize winners at L. A. Show, '06. Eggs from good laying strains. Eggs, special matings, per 15 $2.00. Incubator lots, $6.00 per 100.
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White Wyandottes and S.C. White Leghorns
Good layers. Trap nests used, Eggs: Wyandottes $1.50 to 2.50 per 15. Leghorns $1.50 per 15.
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Hart's strain. Winners of five firsts at Los Angeles Show, '06, and always winners wherever exhibited. Write for prices.
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White and Buff Wyandottes
Prize-Winning, Egg-Laying,
Wealth-Producing Strain.
M. E. DILLINGHAM, Bx67 San Gabriel, Cal.

Buff Wyandottes
Eggs from pens mated with 2nd prize Cockerel or 2nd prize Pen L. A. Show,.$2.50 per 15. Stock and yards at San Gabriel. **Wm. J. Bodger, 251 S. Main St., Los Angeles, Cal.**

EGGS FOR HATCHING
from a heavy-laying strain of
SINGLE COMB WHITE LEGHORNS
I guarantee 100% fertile. Write for prices.
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T. E. Mills, Prop. Home Phone 1720

White Wyandottes.
High scoring stay white birds. 1st Cock L. A. 1906 show and other winners. Eggs $1.50 to $3. per 13. $10.00 per 100. Mount Holly Poultry Yards, Hollywood, Cal. E. W. Preston, Prop., Sunset, Hollywood, 90l.

WILLARD POULTRY FARM, HYNES, CAL.
Mrs. F. T. Hungerford, Manager
14 Ribbons at The Last Los Angeles Show.
Indian Runner Ducks' Eggs:—$1.00 per 13, $3.00 per 50, $5.00 per 100. White Minorca and White Wyandotte eggs:—$1.50 per 15, $4.00 per 50, $8.00 per 100. Eggs carefully packed and shipped any where.

WHITE MINORCA EGGS
Best of Stock. Great Layers.
$1.50 setting, $8 100, $65 1000.
S. W. MORGAN,
Sunnyside, San Diego Co., Cal.

Mountain View Poultry Ranch
S. C. White Leghorns—Heavy layers. Eggs, $1.50 per 15, $5.00 per 100.
Indian Runner Ducks—Males for sale. Eggs, $1.00 per 13, $3.00 per 50, $5.00 per 100.
Mrs. J. L. Updyke - Fullerton, Cal.
Successor to Jacob Kreger

Fairview Poultry Yards
Silver Laced Wyandottes—My breeders include 1st prize cockerel, 1st, 2nd and 3rd pullet at the late L. A. show; 1st cockerel at San Diego and 1st hen at L. A., 1905. Eggs for the remainder of the season, $1 per 15.
White Plymouth Rocks—Eggs from choicest pen headed by Fairview Prince, a son of our best laying hen, $1 per 15 for balance of the season.
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World's Chick Feed of To-Day. The only original **Dry Chick Feed.** All others are worthless imitations. **Chamberlain's Perfect Chick Feed** was used exclusively at the great St. Louis World's Fair during the 7 months. This the highest compliment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.

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FARM INDUSTRIES FOR WOMEN

Continued from first page.

ing. The sale of butter is helped or hindered by its appearance as well as by its quality.

People like to see things they are going to eat put up in an attractive form; and often with a little care in this respect the selling price of butter can be increased one or two cents per pound. A neat crock is a satisfactory package, or the butter may be put into square prints and these packed in parafined pasteboard boxes.

Those who have the best success with farm dairy butter establish a permanent trade, and supply their customers regularly each week. Trade of this kind is very profitable when fair prices can be secured. It has the advantage of continuing throughout the year instead of being very dull at one time and very much overstocked at another. Care should be taken to arrange the dairy so that a large proportion of the cows will be milking in the winter season.

There is an opportunity also for the farm dairy woman to use her milk for making cheese. Statistics show that the great bulk of cheese is made in factories. There is no advantage of competing with well-made factory cheese. But in the farm dairy, small cheese can be made and of different styles or kinds from those produced by the factories. If the quality of such cheese is good and uniform, it need not require more than ordinary business ability to develop a good trade for it.

When conditions are favorable there is no more profitable way of disposing of milk than its sale at retail in the form of raw milk and cream. This business has the advantage of running throughout the year and is not subject to great fluctuations on account of changes of seasons. In these days we hear much about the need of better milk as well as the need of better foods generally and better sanitary conditions which have to do with the public health. The dairyman who produces his milk in a sanitary way should be able to secure customers for it at fair prices. But he must first convince the public that his work is being carried on in the proper manner and that he really has what they want.

* * *

Bee Culture.—Success at keeping bees depends on various things: Steady nerve, calm movements, patience, a system not too susceptible to the sting of bees, a liking for the work, and a location suited to the needs of the little honey makers. If a woman has these necessary qualifications she may feel very safe in becoming a bee-keeper. Many women have thus added to the family income and some whom we have known have supported the family entirely by this work, which they found at once interesting and profitable. Several women of our acquaintance have bought immunity from the drudgery of the kitchen work by money which they have earned in the apiary. While there is some hard work in attending the bee-hives, especially in preparing the apiary for winter, yet much of the labor is enjoyable, and much of it is done in the open air.

* * *

A Garden.—Some women shrink from gardening as a back-aching, knee-tiring industry. But perhaps these same women sew till the ribs are sore and scrub till the sides and knees ache. To be sure, the peas should be picked in the early morning, and the skirts become bedraggled. Short skirts, made of denim, are good for gardening—much better than wornout long skirts not good enough for anything else. An hour in the early morning and an hour at night are sufficient to make a garden one is proud to show to the neighbors. The woman who works it has had fresh air, and working in the dirt is not considered unhealthful.

* * *

Fruit Growing.—Women are becoming students of horticulture; and, while a few years ago it was an experiment, now her success is an established possibility. Not alone is she successful with raspberries, strawberries, blackberries, currants and gooseberries, but with the larger fruit as well. She has become an orchardist, and that with much pleasure and profit to herself.

It is not possible in this brief discussion to point out the conditions for success in raising fruit, and the pests that are to be combated and the results to be attained. Books on gardening and the raising of fruits, government bulletins, as well as those of the experiment stations all are available and healthful in this study.

* * *

Weaving.—The revival of hand weaving seems to be near, and looms which have been put aside for years are now in demand. This would indicate that weaving is not a caprice of fashion, but that it has genuine value. The power loom has superseded the hand loom for most purposes; still the commercial value of hand made textures has stood the test of time. It is a common thing for persons to note that laces and other fabrics have rare value because they were hand made. If a woman has material and the loom she can easily add to her revenue by weaving rugs, which are taking the place of carpets. This does not mean that the old-time saffrons, magentas and purples are in demand, but that good colors and combinations, with a satisfactory warp, may produce rugs for which there is ready sale, if one is in the right locality.

CROPS TO BE PRODUCED BY ELECTRICITY.

It is quite within the bounds of possibility—given an adequate supply of electricity at a sufficiently cheap rate—that in the not very distant future Great Britain may once more be able to produce the bulk of the wheat she consumes, and to find employment for a much greater proportion of her sons upon her own soil. The fields of the future will be covered in with a network of wires, which will radiate high-tension electrity through the crops beneath, and bring them to a fruitfulness such as the old-fashioned sunshine could not possibly bestow. Such, at any rate, is the potential outcome of experiments which Mr. J. E. Newman, an electrical engineer, is carrying out on a farm at Iron Cross, midway between Evesham and Alcester. Twelve of the acres included in the experiment have been sown with wheat, seven with barley, and there are small plots of other crops. In the case of almost all of them Mr. Newman confidently expects that germination will be hastened and the yield increased as a result of the discharge of electricity from the wires. In the case of the wheat, he says, he will be disappointed if the yield, both of grain and of straw, be not 25 per cent. greater than it would be otherwise. But it would be well to wait for the result.

The Boys and Girls Magazine published at Ithaca, N. Y., is devoted to nature study and kindred subjects of interest and profit to both children and adults. The low price of fifty cents per year should give it a place in every family where there are small children.

The Pomona Fruit Growers' Association, having discontiued fruit drying, have on hand 9000 drying trays, 500 picking boxes, and two graders which can be had at a great bargain by addressing R. D. Russell, corner Phillips and Ellen Sts., Pomona, Cal.

IT'S PENNY WISE.

Policy to set out a good tree, costing good money and then let the sun burn the bark or the rabbits gnaw it when for $1.00 an acre you can get Yucca Tree Protectors that are practically indestructible. Write for free sample of the wrap. Yucca Manufacturing Company, 2124 Willow St., Los Angeles.

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Fastest drillers known. Great money earners!
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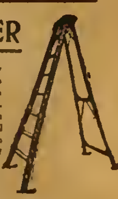
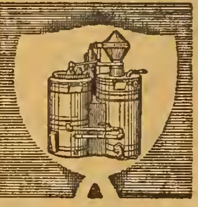
We have been making the Boss Fruit Ladder since 1895, and thousands of them are now in use. They are lighter, stronger and stiffer than any other make. A 10-ft. ladder weighs 25 lbs. so that girls and boys can handle them. Each step is braced with four wire braces. We will ship one or more to any S. P. R. R. Station in California, on receipt of price—30 cents per foot and prepay the freight.
Driver, Aber & Co., San Leandro, Cal.





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The day has gone by when the farm telephone is considered a luxury—time was and not so long ago at that, when a telephone in a farm-house was looked upon as such. ***Today it is a necessity.***
THE WILLIAMS FARM TELEPHONE
has had a lot to do with bringing about this change, making it easy for the farmer to form his own telephone company at no great cost—keeping him ever in touch with his doctor, dealer, banker, freight-agent, and all others in a business way—to say nothing of the social side, putting him in communication with his neighbors at will. Think it over and write us for booklet "Over the Wire." THE WILLIAMS TELEPHONE & SUPPLY CO.
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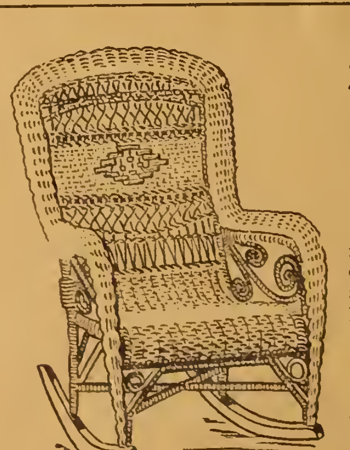

Solid Comfort Rattan Furniture
The coming months are the months we most enjoy the out-of-door life; the hours spent on a shaded porch or at a summer home.
Now is the Time to Select Your Summer Furniture
The Reed and Rattan Furniture is light and airy; ever suggestive of coolness, ease and comfort. It is the king of furniture you should secure for your future hours of leisure.
We have a large and varied assortment of rattan furniture of all kinds. Choose while the showing is complete.
Niles Pease Furniture Co.
439-441-443 S. Spring St., Los Angeles, Cal.

Queries and Replies

MANGE ON DOGS.

Editor Cultivator:—Please give me a cure for mange on dogs.—J. L. P., Anaheim.

Scrub well every two days, using one dram of bichloride mercury to one-half gallon of water.

A "SQUASHED" BUG.

Editor Cultivator:—Will you kindly tell me through the columns of your paper what kind of insect I inclose and what to do to get rid of them? They seem to be in swarms out of doors. If you would kindly tell me what to use to exterminate them completely.—A Subscriber.

Bug enclosed had been ground to pieces under a postal stamp. Would advise you to send them to S. A. Pease of your own county, or send us specimens (more than one) in a box, so they will reach us in good condition.

ROSE BUSHES.

Editor Cultivator:—I would kindly ask you to inform me through the columns of The Cultivator a recipe for rose bushes or rose bush plants. We have a few large rose bushes, and the new growth especially, also other leaves, are showing large signs of dying out. Must be that some insect is working on them, for moisture they have plenty.—R. B., Redlands.

Nothing at all can be told from the very slight description given. Try again; we are anxious to help you.

RYE GRASS.

Editor Cultivator:—Please tell me name of enclosed grain, which is growing thickly among my wheat.—R. J. W., Oleander.

A Rye Grass (Lolium, probably L. temulentum), which has come up very thickly this season among all cereals. Will endeavor to learn its food value and publish a note on same.

MATURITY OF NOTE.

Editor Cultivator:—If a person gives a note which has become due, can the party holding the note commence suit, provided the note giver is unable to pay but tenders another payment of interest in advance? How long after the note becomes due can suit be entered?—W. O. B.

As soon as the note becomes due the tendering of further interest will in no way stop its collection, excepting by consent of the holder of the note, and suit may be begun at once if so desired.

OWNERS OF ROADS.

Editor Cultivator:—Kindly answer: (1) Has the owner of land along a roadway entire control over shade or fruit trees planted by him according to State law, within the limits of the public road, and can he remove them when he sees fit?

(2) Can the owner control the grass or pasturage bordering the road on his side. or can drovers. travelers and others pasture stock there without his consent?—B. A. B., Ventura.

The question of law referred to above may be modified in various counties or municipalities according to the local ordinances, but from the standpoint of the State law it may be said that the owner of the land practically controls the trees and growth which may be in the roadway, provided they are planted as the query says. according to State law. At least such is the general custom which is often abused in this, that beautiful shade trees are sometimes removed to give to the owner of the adjoining land a little stove wood. much to the detriment of the beauty of the section and a loss to the traveling public.

As to pasturage or control of growth along the street, if such is permitted by the authorities. it would be controlled by the adjoining property owner. The roadway, however, is supposed to be for public use as a highway. Should campers or travelers see fit to make an attempt to use the pasturage in front of a man's property, he certainly has a right to order them off and secure the enforcement of his order.

CANNING BEANS.

Editor Cultivator:—As a subscriber to your valuable paper I desire to ask if you can give me a formula or recipe for canning Lima and string beans for home use? An answer through the columns of the Cultivator would be greatly appreciated.—Mrs. M. C., San Diego.

String beans are canned either entire or else are strung and snapped into the usual lengths for cooking. They are then blanched by cooking for fifteen minutes in a kettle of water containing an ounce of baking soda to every four gallons of water. This fixes the green color. If you have a wire basket it is convenient for this work, if you have not, use a ladle for the beans, lifting them from the boiling water into cold water, leaving them in it until cold. Drain them and pack into the cans with your hands, making the cans as full as possible. Then cover them with a cold brine made as follows: Boil a pound of salt in five gallons of water for ten minutes, strain when cold, through a piece of cheese cloth. If tin cans are used (and they are far the easiest to handle) solder the can, leaving only the small dotting hole open, put into boiling water for eight minutes, remove the cans, solder up the little vent hole and return to the hot water, cooking them for one hour and three-quarters. Remove and cool in cold water. If glass jars are used put the rubbers on but leave off the covers for the first cooking, then tighten up the covers as firm as possible before the second cooking. Glass jars are not apt to keep as well, for they are much harder to seal up quickly enough to exclude all the bacteria in the air. Lima beans are prepared in the same way, first blanched with soda, then receiving the same processing. Only the young green beans can be used and even these are better if an ounce of soda is added to the preserving brine. I personally would advise you not to can Limas, as they are regarded by expert canners as difficult and not certain to be perfect when the cans are opened. Why not pick them young and dry on board trays in the open air . If this is done, be sure to take them up and put away in light boxes, while they are hot from the sunshine. Taken in this way there is little danger of weevils, or worms troubling them.—Minna E. Sherman.

STRAWBERRY TROUBLE.

Ed. Cultivator.—Enclosed under separate cover I send you a sample of strawberry plant and would like to find out what the trouble with them is. The bed was set out a year ago and yielded a big crop last season, but put no runners out. This spring they have not done anything at all, and don't act like they would. Have had good care, use a wheel hoe and cultivator and do not use a horse cultivator in them. Can you tell what is the matter and is there a remedy.—A subscriber, El Modena.

A careful examination of the plant sent shows nothing worse than a bad case of mould, caused, no doubt, by the excess of wet, cloudy weather, on old weak, but compact plants. Rust was also quite noticeable but this would not cause such serious results as noted. If this plant was set out but a year ago, a mistake was made, for it has a well defined "stump," showing it to have passed the age of usefulness. We think that with bright clear weather, the plants will come out all right; if not we would get some fresh young stock.

RYE GRASS OR CHEAT.

Three subscribers have each sent in, growing among their cereals, claim- during the past week, a foreign grain ing that whereas wheat, oats, or barley were planted, the grain which sprung up was not among the seed sown.

The specimen sent is Lolium temulentum, the plant commonly called "cheat" in California. This plant has a bad reputation abroad, even charged with being poisonous to stock, but California experience, so far, disagrees with European, for the plant is valuable for feeding when green and makes a fair kind of hay if cut before it hardens too much. We, therefore, see no reason to warn people against it and it would avail little if we did, because the whole state is full of the seed of the plant, and it becomes exceedingly abundant whenever the season turns out to be unusually wet.

This is the plant which the California farmer is apt to think wheat and other grains turn into when the season is wet. The cheat which "wheat turns into" in the Eastern states is an entirely different plant. Those who take a more rational view of the thing wonder why it is that wheat would turn into one plant in California and into an entirely different plant in the East under the same conditions. The solution of the matter is, of course, that the wheat turns into nothing by the rotting of the seed. These two plants being possessed of very hardy seed pop up under conditions adverse to wheat or other cereals and occupy the land.

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Household Department

COUNTRY LIFE.

Happy the man who tills his field
  Content with rustic labor;
Earth does to him her fulness yield,
  Heap what may to his neighbor.
Well days, sound nights, oh, can
  there be
A life more rational and free?

Dear country life of child and man!
  For both the best, the strongest
That with the earliest race began,
  And hast outlived the longest;
Their cities perished long ago;
Who the first farmers were we know.

Perhaps our Babels too will fall;
  If so, no lamentations,
For Mother Earth will shelter all,
  And feed the unborn nations;
Yes, and the swords that menace now,
  Will then be beaten to the plough.
    Richard Henry Stoddard.

BACK TO THE SOIL.

Sociologists are looking more and more toward decentralization of population as a remedy for the squalidity and misery found in great cities. It is admitted by everybody that the life involving the sweat-shop and the slum is less healthy physically, morally, industrially, and politically, than the old life on the farm. The effect upon the individual of pure air and cleanly surroundings can hardly be estimated. A business of one's own, if it is small, does vastly more in the development of character, the foundation of all good citizenship, than drudging along eternally subject to the will or perhaps the whims of employers.

But the city has vast social advantages, and the country has been lonely beyond measure. Human fellowship is one of the strongest of sentiments, and almost any sort of hardship will be endured in preference to isolation. Everybody agrees that it would be well for the people in the city slums to get back to the soil. How they can be induced to do so is the problem.

It is obvious that the best way is to show the persons most interested that they can better their condition, and at the same time sacrifice few of the social advantages enjoyed in the city. Thanks to the march of invention which has brought about city congestion, the tendency now seems to be toward decentralization. Cities are spreading out. Suburban districts are becoming the favorite places of residence of the well-to-do as well as the wealthy, at least during a portion of the year. In some of the older cities residence property near the center of the city is positively falling off in value, while values are rising in the suburbs. Rapid transit makes it more and more feasible to live some distance from one's work. The movement is back toward the soil.

In London colonization in suburbs is being worked out as a means of relieving the over-crowded tenement districts. New York is sending its population into Jersey and up the Hudson for dwelling places. With the development and cheapening of rapid transit it is pretty certain that this movement will increase in force.

Even some manufacturers have taken the hint, and their plants are built some distance from trade centers, where their employers may have room for cottages and gardens.

THE CITY AND THE COUNTRY.

The Reverend Robert Collyer made the remark on one occasion that during his twenty years residence in Chicago he had not known of a single man who had come prominently to the front in any pursuit who was born and bred in a large city. The leading men in every calling—Judges, lawyers, clergymen, editors, merchants, and so on—had been reared in the country, away from the follies, the vices and the enervating influences that are known to exist in all large towns. Fashion reduces all young men and women to the same dull and uninteresting level. New York is now an old city. It has produced generations of men. How few of them have ever made their mark, there or elsewhere! It cannot be said that they go into other parts of the country and there develop the higher forms of manhood. They are never heard of except in the aggregated, concrete form of "our fellow-citizens." How much of a man is due to qualities born in him, and how much to his early environment, no philosopher has been able to tell us; but it is impossible to conceive of a sagacious intellect like that of Lincoln, of a glorious mind like Webster's, emerging from the false glitter and noisy commotion of the city. We think of Washington, the patrician sage, pacing among the stately oaks of old Virginia; of Jefferson in his country-seat, and of John Adams tilling his farm in Massachusetts. These men, it is true, flourished at a time when there were no large cities in the United States. But later on we see Lincoln and Garfield reaching the topmost round of fame's ladder from the obscurity of country homes. Not one American president, from first to last, was born in a city.

FARMING.

While the city is refreshed and renovated by the pure tides poured from the country into its steamy and turbid channels, the cultivation of the soil affords at home that moderate excitement, healthful occupation, and reasonable return, which most conduce to the prosperity and enjoyment of life. It is, in fact, the primitive employment of man,—first in time, first in importance. The newly-created father of mankind was placed by the Supreme Author of his being in the garden which the hand of Omnipotence itself had planted, "to dress and to keep it." Before the heaving bellows had urged the furnace, before a hammer had struck upon an anvil, before the gleaming waters had flashed from an oar, before trade had hung up its scales or gauged its measures, the culture of the soil began. "To dress the garden and to keep it!" —This was the key-note struck by the hand of God himself in that long, joyous, wailing, triumphant, troubled, pensive strain of life-music which sounds through the generations and ages of our race. Banished from the garden of Eden, man's merciful sentence—at once doom, reprieve and livelihood—was "to till the ground from which he was taken," and this, in its primitive simplicity, was the occupaton of the gathering societies of men.

To this wholesome discipline the might East, in the days of her ascendency, was trained, and so rapid was her progress that in periods anterior to the dawn of history she had tamed the domestic animals, had saddled the horse, and yoked the ox, and milked the cow, and sheared the patient sheep, and possessed herself of most of the cereal grains which feed mankind at the present day. I obtained from the gardens of Chatsworth, and sent to this country, where they germinated, two specimens of wheat raised from grains supposed to have been wrapped up in Egyptian mummy-cloths, 3,000 years ago, and not materially differing from our modern varieties; one of them, indeed, being precisely identical—thus affording us the pleasing assurance that the corn which Joseph placed in Benjamin's sack before the great pyramid was built was not inferior to the best of the present day.—Edward Everett.

FARM LIFE.

Agriculture is the greatest among the arts, for it is first in supplying our necessities. It is the mother and nurse of all other arts. It favors and strengthens population; it creates and maintains manufactures, gives employment to navigation and materials to commerce. It animates every species of industry, and opens to nations the surest channels of opulence. It is also the strongest bond of well regulated society, the surest basis of internal peace, the natural associate of good morals.

We ought to count among the benefits of agriculture the charm which the practice of it communicates to a country life. That charm which has made the country, in our own view, the retreat of the hero, the asylum of the sage, and the temple of the historic muse. The strong desire, the longing after the country, with which we find the bulk of mankind to be penetrated, points to it as the chosen abode of sublunary bliss. The sweet occupations of culture with her varied products and attendant enjoyments are, at least, a relief from the stifling atmosphere of the city, the monotony of subdivided employments, the anxious uncertainty of commerce, the vexations of ambition so often disappointed, of self-love so often mortified, of factitious pleasures and unsubstantial vanities.

We deplore the disposition of young men to get away from their farm homes to our larger cities, where they are subject to difficulties and temptations, which, but too often, they fail to overcome.

Depend upon it, if you would hold your sons and brothers back from roaming away into the perilous centers, you must steadily make three attempts—to abate the taskwork of farming, to raise maximum crops and profits, and to surround your work with the exhilaration of intellectual progress. You must elevate the whole spirit of your vocation for your vocation's sake, till no other can outstrip it in what most adorns and strengthens a civilized state.

CLOSE TO NATURE.

To walk with the breeze upon one's brow, to trample the level grass exuberant with freshness, to climb upon the mountain, to follow through the meadows some thread of water gliding under rushes and water-plants,—I give you my word for it, there is happiness in this. At this contact with healthy and natural things, the follies of the world drop off as drop the dead leaves when the spring sap rises and the young leaves put forth.

A GUIDE.

"I shall pass this way but once. If, therefore, there be any kindness I can show, or any good I can do to my fellow human beings, let me do it now. Let me not defer or neglect it, for I shall not pass this way again."

THE SADDEST YET.

Maud Muller in her cozy home
Raked her head with a fine-tooth
  comb.
The judge rode by in his runabout
And advised the maiden to smoke 'em
  out.
Maud tossed her head, and said: "Oh
  fudge!"
And told her beau, and he licked the
  judge.

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WOMAN'S FARM WORK

Many a farm and farmer would go to rack and ruin, morally and financially, were it not for the woman's influence and the wife's help. The average farmer and farm are what they are, largely because of the wife.

Sound health is fundamental in human success. Material and ethical development depend upon this, for, while individuals in poor health and with feeble digestion may accomplish much and enjoy life, we all know that for the mass, the vital essential is an organism sound and normal from head to foot.

To properly nourish the body and wisely to insure its health, physical and moral, are duties in every family that devolve upon the wife. To fulfill her duties in this respect, a woman requires genius of the highest order, intuiton, knowledge, experience, tact, sense, patience—all the attributes of perfect and successful motherhood and womanhood. Few men on the farm understand the qualities possessed by the women who toil by their sides. Every woman possesses these qualities to a degree; life, at its best, depends upon the extent to which she is able to develop and mploy them.

The responsibilities of women are complex and they must fit themselves to do their work. The educational needs of young women who are to do the work of the farm are but feebly realized and poorly provided for in schools. The manner in which a woman rises to her responsibilities on the farm, in view of her inefficient preparation for her duties is phenomenal. The successful woman on the farm has the most glorious success posible in a woman' life. Woman's work on the farm is just as important, just as satisfying as man's.—Exchange.

SUGGESTIONS FOR THE HOUSEWIFE.

For wagon grease or tar spots rub well with kerosene while the grease is fresh; then wash out in cold soft water, using no soap.

Irons that have been put away sticky should be well scraped with a thin knife, then rubbed with a rough cloth moistened with kerosene.

To cleanse a kitchen range, always after using, rub well with an old newspaper, which removes the grease, and then black it when cold.

Kerosene will remove ink stains and fresh paint, while nothing takes out blood stains better than cold soapsuds to which kerosene has been added.

Olives soon grow moldy when the bottle containing them is opened. A little scraped horseradish laid over them will keep those remaining in the bottle fresh and sweet.

Pulverize and mix one ounce each of cedar, rhubarb and cloves, put in bags and hang in your clothes closets; they will prevent moths and give a good, wholesome perfume to your clothing.

To remove a glass stopper pour hot water over the neck of the bottle. The heat causes the glass to expand and, it then being considerable larger than the stopper, readily releases the latter.

A temporary way to serve ice cream is in jelly moulds. Turn the jelly out on a plate and scoop out the center with a teaspoon dipped in hot water. Fill the thick shell of jelly with ice cream and serve at once.

Instead of codfish balls, serve baked codfish. Cream enough desiccated codfish to make a pint, add a few grains of paprika and from one-quarter to one-halp a cup of grated cheese. Fill scallop shells with the mixture, cover with buttered crumbs and bake till a nice brown.

FATHERS AND CHILDREN.

A gentleman met a friend near his own home and they joined company on their way to business. Before they had gone far they met a trim nurse maid wheeling a baby carriage, in which was a fine six-months-old baby.

"That is a jolly-looking chap," said the gentleman.

He hastily glanced at his watch, and finding that he had a moment to spare, stopped the carriage and chirruped to the baby, who smiled genially in response.

"I have a little one at home about this one's age,' observed the gentle man to his friend. "By the way," he continued, to the maid, "whose baby is this?"

"Your's, sir," responded the nurse in much astonishment.

Of course the story was too good to keep and the faithless friend put it at once into circulation.

How often are men heard to say: "I leave the training of my children entirely to my wife;" or "I never interfere with the dicipline; my wife attends to all that." Another type of father, still, assumes in his family the role of high lord executioner.

"If you don't stop that," says the fond, foolish mother, "I will tell your father on you."

In some families there is no threat so dreadful, and I have known a father to tell laughingly, as if it were a good joke, of the poor scared little faces which were lifted to his when he appeared suddenly among them with a rattan in his hand, inquiring whether there were any whippings to be dealt out that afternoon."

Alas, how far away these poor, earthly fathers are from the fatherly ideal which is set forth in the Bible! And how can they illustrate to a child anything of the fatherhood of God?—Selected.

NOT TOO YOUNG TO LEARN.

A mother of a young family who reads The Cultivator asks if I think little children can be impressed by talking to them of the danger of infection and warning them to be careful at school and elsewhere. That it seems to her she makes so little impression upon them.

Do not be discouraged, my friend, for it is remarkable how young children do learn, and they can be taught to guard against all such trouble, usually, is my experience and observation. Much contagion is transmitted because children have not been carefully instructed along such lines. The hands may carry the germs of infection secreted in the dirt under the little nails. Children can be taught not to use one another's handkerchiefs or towel, or wash in the same basin at school, etc. Little children are so innocent usually that they do not know how to refuse a friend their handkerchief to wipe fruit from their mouth and hands, but I heard a little boy say to another: "Oh, no; I cannot let you use my handkerchief; mother said I must not."

With catarrahal colds, sore throats and eyes, it is best to have a child's handkerchiefs and towels they use laundered to themselves, and wash them in a hot, boiling suds with Pearline in it to eat the soil quicker, and it cleanses so thoroughly. Some put borax in the wash water to kill germs. It is best to study and observe all

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BEAUTIFUL SCENERY along the line through California, Nevada and Utah. 'Tis not entirely a desert region. You will be surprised when you see the reality.
SEE SALT LAKE.—No extra expense is necessary to stop over a day at Salt Lake City. There's much to interest you in the old Mormon City.
THROUGH SLEEPERS are run on both Salt Lake Route trains from Los Angeles. THE LOS ANGELES LIMITED with standard and tourist runs solid though to Chicago via Ogden, Union Pacific and North Western lines. There's nothing finer in train equipment.
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THE OVERLAND carries every day tourist sleepers from Los Angeles to Chicago via D. & R. G. & Burlington Route, to St. Louis via Union Pacific & Wabash Railroads and to St. Louis twice a week via D. & R. G. & Missouri Pacific Railways. There is also every day a Standard Sleeper through to Denver via D. & R. G.
DINING CARS are carried on both THE LOS ANGELES LIMITED and OVERLAND in which meals are served a la carte. You pay for what you want at reasonable prices and the service is the best possible.
EREE CHAIR CARS are run on THE OVERLAND to Salt Lake City connecting with similar cars on other lines there. These cars are very comfortable. Save sleepers expenses if you wish.
EASTERN EXCURSIONS at much reduced rates will be run by the Salt Lake Route this summer. From all stations in California tickets will be sold as follows for round trip:
May 25, 26 and 27—New Haven, Conn. Rate 92.10. Return limit Aug. 31st.
June 6 and 7—Louisville, Ky. Rate $75.75. Return limit 90 days.
June 6 and 7, July 2 and 3, August 7, 8 and 9.—Chicago and Duluth $72.50 St. Paul and Minneapolis, $70.00. St. Louis, Memphis and New Orleans, $67.50.
Missouri River points and Fort Worth and Houston, Tex., $60 00.
Also reductions to Atlantic Coast Cities. See Salt Lake Route agents for full particulars and plan your trip to travel over this route either going or returning.
T. C. PECK, A. G. P. A., Los Angeles, Cal.

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ON THE ABOVE DATES ROUND TRIP TICKETS WILL BE SOLD TO

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Kansas City and Return	60.00
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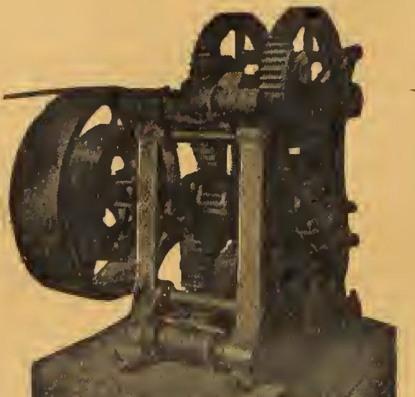
The Pomona Pump



The New Pomona Pump is now being manufactured with machine cut gears and machine cut steel or bronze pinions. The pump fitted with this kind of gearing runs as smooth as a clock and there is absolutely no noise or vibration. The company have recently taken contracts for installing their largest sized pump with this class of gearing for the Artesian Belt Water Company of San Dimas. Western Water & Power Company of Glendora and other large irrigation companies. They are required to furnish these pumps with cylinders up to 12 inches in diameter and 72 stroke which has capacity of over 60 Miner's inches of water. The valves are made entirely of phosph r bronze with ground metal taper seats so there is very little obstructiin to the water in passing through them and it is impossible to clog them with sand. These, in connection with machine cut gears, in the pump head, make a strictly high grade pumping outfit and the oest by a long ways of anything on the market today.

This head and valves are both protected by United States patent. Beware of infringing as both manfacturer and user are liable.

The company has recently installed one of their latest improved heads for the Santa Anita Land Company, a subdivison of the Baldwin Ranch. Below is what the owners have to say about it:

"The new 38 pump you installed for us on our tract on the E. J. (Lucky) Baldwin Ranch is giving us satisfaction in every way. We think we have the very best that money will buy. Both as regards to pump, material used and installation. We made an excellent change when we removed the pump we had been using and installed your make."

We have pleased these people and there is no reason why we cannot please you.

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The Produce Markets

Los Angeles Markets.

Los Angeles, June 20, 1906.

Butter.

Business in produce yesterday was chiefly of a routine character, and price changes were only of minor consequence, the general market holding steady and displaying no discouraging features, but the butter board put an extra 5 cents on local creamery butter.

Local Creamery, per roll	.50
Valley Creamery, fancy	.42-45
Coast, Fancy	.40@42½
Coast, Choice	.37½@40
Fancy Eastern Cubes	.24
Cooking	.18

Cheese.

Cal. 3-℔. hand	.18
Cal. Young America	.17
California Anchor, Large	.16
Northern	.13-14
Domestic Swiss	.20
Imported do	.28

Eggs and Poultry.

Eggs, fresh ranch	.23
Northern candled	.19

There is more difference between prices to producers of poultry and to the retailers of poultry than in most other lines. The following are average prices which dealers pay to producers for live weight:

Hens, per ℔	.12
Young roosters, per ℔	.16
Fryers	.16
Broilers, per ℔	.16
Old Roosters	.8
Turkeys	.17-19
Geese	.11
Ducks	.11

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock:

Hogs, 200 ℔	.5½
Prime Steers	.4
Cows	.3
Calves, per ℔	.4½
Sheep, ewes, per head	.4.25
Lambs, per head	.3.25
Wethers	.4.75

Potatoes.

Burbanks, fancy	.1.35-1.50
Oregon	.1.35-1.50
Highland	.1.25-1.35
Sweets, (white)	.$4.00

Vegetables.

Silver Skins	.1.50
Bermuda	.2.50
Garlic	.8@10
Wax Beans	.4@5
Rhubarb, per box	.1.25
Parsnips, per doz	.25@30
Cabbage, per doz	.85
Asparagus	.7@11
Lettuce, per crate	.1.25
Bell Peppers	.15@18
Chili Peppers, Green	.18
Chili, dried	.20
Egg Plant, per ℔	.20@25
Cucumbers, per doz	.30@75
Radishes, per doz	.15
String Beans	.2@3
Green Corn, local, per doz	.25
Beets	.25@30
Green Onions, doz. bunches	.15@20
Carrots, per lb	.4
Peas, per lb	.2@3
Turnips, doz bunches	.25@30
Celery, per doz	.45@60
Tomatoes, 4 basket crate	.2.25

Citrus Fruits

Lemons, Standard	3.75
Lemons, Choice	.3.85@3.90
Lemons, Fancy	.4.25
Valencias	.3.50
Sweets	.300@3.25
Navels, Choice	.$3.00
Navels, Fancy	.3.25@3.50
Grapefruit	.$3.50@4.00
Grapefruit, seeds	.$2.50

Fresh Fruits.

Apples are very scarce and of indifferent quality.

Missouri Pippins	.2.75@3.00
N. Y. Pippins	.$2.50
Apricots, per 30-℔ box	.1.25@1.35
Strawberries	.3½@5
Dewberries	.4
Cherries, Black	.10@12
Cherries, White, Royal Anne	.10@11
Logan Berries	.4
Raspberries	.8@10

Dried Fruits

Evaporated apples, ch to fy	.15
Apricots	.14
Peaches	.12½
Pears	.13
Plums	.11
Santa Clara Prunes	.4@8½
Smyrna Figs	.15@17

Beans, Dried.

Limas, No. 1	.5.00
Pinks, fancy	.2.20@2.30
Lady Washington	.3.10@3.25
Small White	.3.00@3.75
Black Eyes	.6.50

Honey.

The honey prices here quoted are those of the Los Angeles Board of Trade, the most responsible authority we have. They are jobbers prices, that is, prices at which the jobber sells to grocers and others in small lots. The producer can take from this his freight to Los Angeles and one cent per pound for commission and will have left the net price to him.

Honey, extracted, water white, 60-℔ cans	.6
Honey, extracted, white	.5½
Light amber	.5
Comb, water white, 1-℔ frames	.14-15
White	.13
Light amber	.12@12½
Beeswax	.25

Nuts.

Peanuts, Virginia	.6½
Peanuts, California	.5
Walnuts	.13½

Hay.

Barley, No. 1	.$12.00@14.00
Barley, No. 2	.$10@12.50
Alfalfa, local	11.00@13.00
Plain Oat Hay, No. 1	13.00@15.00
Plain Oat Hay, No. 2	8.00@13.00

Grain.

Purchasing prices f. o. b., Los Angeles, are:

Wheat	.1.25@1.37½
Barley	.1.20@1.22½
Corn	.1.22 @1.24
Rolled Barley	.1.40
Bran	.1.20
Feed Corn Meal	.1.45
Shorts	.1.45
Wheat, per cwt	.1.50@1.65
Cracked Corn	.1.45
Oil Cake Meal	.2.50
Cocoanut Meal	.1.50

San Francisco Markets.

San Francisco, June 19, 1906.

There was a good demand for eggs and prices were held steady at unchanged figures. Butter was in fair request for the better grades. Cheese was quiet, but steady.

The ruling prices of the San Francisco Wholesale Dairy Produce Exchange yesterday were as follows:

Butter.

BUTTER—Fresh California, extra, 19c; firsts, 18½c; seconds, 17-17½c; packing stock, firsts, 15-16c; seconds, 14c.

Cheese.

CHEESE—New California fancy, 9½c; firsts, 9c; Young America, fancy, 11c; Eastern, New York fancy, 16½-17c; western, new, 15c.

Eggs.

EGGS—Fresh California selected, 20c; firsts, 19c; seconds, 18c.

Poultry.

Hens of large size were in demand and full prices were readily paid for desirable stock. Game was dull and neglected.

POULTRY—Old roosters, per doz., $3.50-4.50; young roosters, $5-7; fryers, $3-4.50; broilers, $2.50-3.50; hens, small, $4-4.50; large, $5-6; live turkeys, per lb., nominal; dressed turkeys, nominal; ducks, old, nominal; young, nominal; pigeons, per doz, $1; young, $1.25-1.50.

GAME—Hare, $1.25-1.50 per doz.; rabbits, $1.50-2.

Fresh Fruits.

The leading fruits in the market sold yesterday at the following prices: Strawberries, chest, $4.50-6 for large varieties and $7-11 for Longworths; apples, $1.50-2.25 per box; cherries, black varieties, 60-90c per drawer; white, 50-80c per drawer; cherries, in bulk, black, 6-10c per lb; white, 5-8c; gooseberries, 50-75c per drawer; oranges, navels, $2.50-3.50 per box, with a few second grade at $2 per box; lemons, $2-4.50 per box; Mexican limes, $4.50-5 per box; bananas, 75c-$1.75 per bunch; pineapples, $2-3.50 per dozen; currants, $4-6 per chest; loganberries, per chest $3.50-5; cherry plums, per drawer, 30-40c; peaches, 50-90c; apricots, $1-1.50 for large boxes and 50-75c for small; blackberries, per chest, $4-6.50; raspberries, per chest, $5.50-8.

Dried Fruits.

Prices for carload lots, 1905 crop, free on board at California common shipping points, in bags, are per lb as follows:

Prunes—Choice, 4¼-4½c per lb, basis for the four sizes. For boxed fruit add ¼-½c per lb.

Apricots—Choice, 12-12½c; extra choice, 13-13½c; fancy, 14-14½c.

Peaches—Choice, 10-11c; extra choice, 11¼-11½c; fancy, 11¾-12c; extra fancy, 12-12½c.

Raisins—Loose Muscatels, 5-6c; seeded raisins, 5½-6½c; London layers, $1.50-1.60.

Vegetables.

Dealers sold vegetables yesterday at the following prices: Asparagus, $1.25-2 for small and $2.25-3 for large box; green peas, 75c-$1.25 per sack; rhubarb, 40-60c per box for small and 75-85c for large; string beans, 2-4c per lb; tomatoes, 75c-$1.25 per box; potatoes, new, 1-1¼c per lb; old Rivers, 75c-$1.10 per sack; Oregon, old, 65-90c; new crop, $1-1.50; Coos Bay, $1-1.15 per sack; onions, new 70-85c per sack; boxes, 25-50c; Oregon, $2-2.50 per cental, as to quality; Australia, $3.50-4; cucumbers, 85c-$1.25 per box; green corn, per doz. 12½-20c.

Live Stock Market.

CATTLE—No. 1 steers, 6½-7c; second quality, 6-6½c; third quality, 5½-6c; No. 1 cows and heifers, 5½-6c; second quality, 5-5½c; third quality, 4-5c; thin cows and heifers, 3-4c; bulls and stags, 2-3c. Prices for all descriptions less 50 per cent for shrinkage.

CALVES—Light, per lb., 4½-4¾c, gross weight; medium, 3½-4c; heavy, 3-3½c.

SHEEP—Per lb: Wethers, No. 1, 4½-5c, gross weight; ewes, No. 1, 4c-4½c, gross weight.

LAMBS—Per lb: Yearlings, 4½c-5c.

HOGS—Per lb: Hard grain fed, weighing alive 80 to 130 lbs., 6c; 130 to 150 lbs, 6½c; 250 to 350 lbs., 6c; rough heavy, 4-5c; common 3½-4c.

Flour and Grain.

Flour and Grain.

WHEAT—No. 1 Shipping, per cental, $1.30-1.32½; inferior grades, $1.25-1.27½; white milling, good to choice, $1.32½-1.37½, with fancy Bluestem, $1.40-1.42½.

BARLEY—No. 1 feed, $1-1.02½; common to fair, 95-98¾c; brewing, nominal.

OATS—White, $1.50-1.75; red, $1.35-1.70, according to quality; black, nominal.

RYE—$1.47½-1.55 per cental.

CORN—Small round yellow, $1.55-1.65; western, mixed, $1.32½; yellow, $1.30-1.37¾; white, $1.35-1.40 per ctl.

Hay and Feedstuffs.

The weekly trade circular of Scott & Magner descriptive of the hay market is as follows:

Arrivals of hay for the six days just passed have amounted to 3727 tons.

This amount is a heavy increase over the preceding weeks, and more than we have received in any one week since the great fire. In view of the fact that the city was practically bare of hay, this large amount has been practically taken care of without effort. The majority of all this amount consisted of old hay, as a very small proportion of it was of the new crop. There has been no change in prices in any particular, while the demand has been very active, and everything offered has been sold at once. It has not been practical to expect any higher prices than have recently prevailed.

The old crop hay is nearly exhausted, and will be entirely used up before the 1st of July. Considerable effort has been made this week to get new hay baled and shipped in certain sections, so as to relieve the situation here. If the transportation companies bring the hay forward a great deal of new hay will be offered on the market during the coming week. At this time, and on this market, new hay will sell very well, but what the effect of the heavy arrivals will be will be later determined. Quotations on new hay are very largely nominal.

Fancy old wheat hay sells from $17 to $18 and choice tame oat hay at $15.

There has not been much inquiry for alfalfa hay, nor has there been but very little coming in. One schooner-load of new crop first cutting alfalfa arrived yesterday, but was not offered for sale on the market.

Straw is rather dull under light arrivals and a most moderate demand.

HAY—Per ton, choice wheat, $13.50-18.50; wheat and oat, $12-16.50; oat, $10-15; barley, nominal; alfalfa, $10-12; new first crop, $6-9; stock, $7-$7.50.

STRAW—Per bale, 35-60c.

FEED—Mixed feed, per ton, $24-25; Calfalfa Meal, $23.50; carload lots, $22; Mealfalfa, per ton, $23.50; carload lots, $22.

BRAN—Per ton, $19.50-21.

MIDDLINGS—Per ton, $26-29.

GROUND BARLEY—Per ton, $24-$25.

FEED CORN MEAL—Choice grades, per ton, $31-32.

CRACKED CORN—Choice stock, per ton, $32-33.

OILCAKE MEAL—Mill rates in 5-ton lots, $37.50; jobbing, $38-38.50.

COCOANUT CAKE—In lots of 10 tons, $23; 5 tons, $23.50; less quantity, $24. Prices are mill rates and are subject to change without notice.

Beans and Seeds.

BEANS—Prices per ctl: Large white, $2.40-2.60; small do, $3.25-3.45; pea, nominal; Lima, $4.40-4.60; red, $3-3.50; pink, $1.85; Bayo, $3.75-3.85; Blackeyes, $5.50-5.65; red kidneys, $3.50-3.75; horse beans, nominal.

SEEDS—Brown Mustard, $4.50-$4.75; yellow mustard, $3.50-3.75; flaxseed, $2.50-3; canary, 6¼-6½c; alfalfa, 13c; rape, 2½-3c; timothy, 5c; hemp, 5½c per lb; millet, 3-3¼c.

DRIED BEANS—Niles, $1.75-1.85; green peas, $2-2.25.

Hops.

Desirable grades of California crop of 1905 sell at 8-11c per pounds; 1906 crop, for future delivery, 9-12c, with occasional sales at 12½c.

Hides and Wool.

HIDES AND SKINS—For round lots prices are as follows:

Wet Salted Hides—No. 1, sound, per lb, heavy steers, over 50 lbs, 13c; medium steers, over 48 lbs, 12c; heavy cows, over 50 lbs, 12c; light hides, 12c; kips, 13c; veal, 13½c; calf, 14c; stags and bulls, 8½c; No. 2 hides, 1c per lb. less.

Dry Hides—Per lb: No. 1, 22c; No. 2, 20c; dry kip, No. 1, 20c; No. 2, 18c; dry calf, No. 1, 24c; No. 2, 22c.

Horse Hides—Salted, large, $3-3.25 each; medium, $2.75 each; small, $2.25 each. Dry—Salted, $2-2.25 each, medium, $1.50-1.75 each.

Sheep Pelts—Long wool skins, $1.25-2 each; medium wool skins, 90c-$1.10 each; short wool skins, 50-75c each; shearings, 20-40c.

WOOL—Per lb.: Fall clip, San Joaquin and Southern Plains, 9-11c; Southern Mountain, 9-11c; middle and southern counties, free, 12-14c; do, defective, 10-12c; Humboldt and Mendocino, 16-18c.

Produce Receipts.

Receipts of interior produce for the forty-eight hours ended at noon yesterday were as follows: Flour, 3750 qr sks; 280 ctls wheat, 1830 ctls barley, 440 ctls oats, 80 ctls corn, 152 ctls cheese, 5 ctls tallow, 12,000 ctls sugar, 512 sks beans, 1850 sks potatoes, 230 sks onions, 515 sks bran, 350 saks middlings, 1027 tons hay, 10 tons straw, 148 ctks butter, 13,860 dz eggs, 57 rolls leather, 1526 hides, 1665 bdls pelts, 250 bxs raisins, 300 flks quicksilver, 635 rolls paper, 182 bbls lime, 500 gals brandy, 14,100 gals wine, 125 hd live stock, 25 bbls chickory.

CITRUS MARKETS

NEW YORK, June 19.—The orange market during the past week was not as active as had been expected. Some buyers bought largely but the bulk of purchasers did not and the result was a reduction in movement. Wholesale and retail prices were maintained at their high level of the preceding week.

Several reasons can be given for the decline in movement, the season is passing and at this time buyers and consumers alike cease to take an active interest as they do earlier. There is always more or less hesitancy about buying oranges in hot weather. The idea is that they will not keep sufficiently long to dispose of them profitably, and as this view is held by substantially all experienced dealers there is unquestionably much foundation for it.

On Saturday twelve cars sold at a slightly lower price than had been ruling and twenty-three cars auctioned on Monday met a like fate. At Boston on Saturday fourteen cars of citrus fruits brought extremely good prices. Twenty-three cars were sold today at a slight reduction. There is a strong and growing demand for lemons.

WASHINGTON NAVELS.

Quail, ee, O. C. Ex.	4.00
Volunteer, ch, S. A. Ex.	3.85
Quail, xc, O. C. Ex.	3.80
Parrott, xc, S. A. Ex.	3.30
Pet, xc, S. A. Ex.	3.40
Stork, xc, S. A. Ex.	3.45
Greyhound, ch, S. A. Ex.	2.70
Coyote, ch, O. C. Ex.	3.15
White Star, fy, Worthley & Str.	2.55
Red Mountain, ch., P. & McK.	2.55
Peacock, st, Worthley & Str.	2.45
Sardonyx, ch, C.C.U. Chula Vista	1.85
Sunrise, st, C.C.U. Chula Vista	1.50

MEDITERRANEAN SWEETS.

Old Mission, C. C. Chapman	3.65
Slover Mountain, Colton	3.40
Golden Eagle, C. C. Chapman	3.20
Fountain, ch, Moffat Bros	3.10
Poinsettia, fy, C.C.U. Riverside	2.95
Santa Fe, st, Moffat Bros	2.35
White Star, fy. Worthley & St.	2.10
Seal, st, C.C.U., Riverside	1.95

ST. MICHAELS (Wholes)

Old Mission, C. C. Chapman	4.10
Golden Eagle, C. C. Chapman	3.20
Orange Prince, fy, Collins Ft Co.	3.10
Fountain, ch, Moffat Bros	2.85
Orchard Queen, ch, Collins F. C.	2.75
California Beauty, ex fy, W. S.	2.60

ST. MICHAELS (Halves)

Poinsettia, fy, C.C.U., Riverside.	1.20
California Beauty, xc, W. & S.	1.15
Quail, xc, O. K. Ex.	1.40

BLOODS (Halves)

Poinsettia, fy, C.C.U., Riverside	3.30
Triumph, xc, C.C.U., Riverside	2.90
Poinsettia, fy, C.C.U., Riverside.	3.15

TANGERINES (Halg boxes)

Poinsettia, fy, C.C.U., Riverside.	.75

LEMONS.

Orchid, or, fy, Altland Frt. Co.	3.00

SEEDLINGS.

Uncle Sam, xf, Riv. Ex.	2.80
Red Mountain, ch, Pinkham & M.	2.30
Triumph, xc, C.C.U., Riverside	1.55

Foreign Lemon Sales.

NEW YORK, June 19.—Thirty-three thousand boxes of Sicily lemons were sold at auction here today. The cargo was in poor condition. Fancy 300s brought $3.50 to $4.25; choice 300s brought $2.50 to $3.00; fancy 360s brought $3.50 to $4.20; choice 360s brought $3.00 to $3.50; wasty stock brought $1.50 to $3.00. The market was lower. The next sale will be on Thursday, when 33,000 boxes will be offered.

California Fruit.

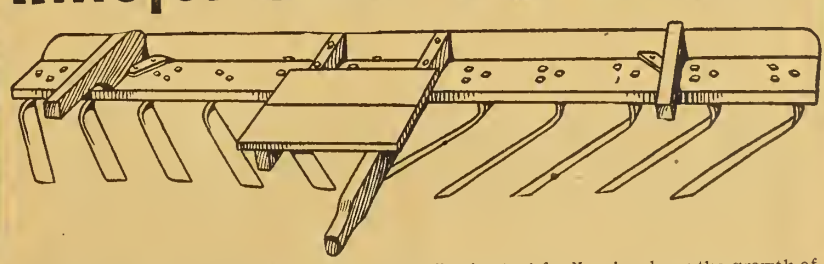
Six assorted cars of deciduous fruit were sold in Eastern auction markets by the California Fruit Distributors one day last week, three in New York grossing $2573, $4308 and $2409, respectively. Plums sold for $1.65 to $2, and cherries, $1.75 to $2.50. Two cars which were sold in Chicago realized $2266 and $2693 each, plums selling for from $1.80 to $2.70, cherries $1.80 to $2 and peaches $1.80.

A car sold in Minneapolis brought $1837, plums selling for from $1.70 to $2.20, cherries $1.65 to $1.80 and peaches $1,25 to $1.50.

RUPTURE
Absolutely corrected. Examinations free. I furnish addresses of my many soundly cured patients and contract to refund all money if unsatisfactory. Also make 14 kinds of Trusses, Elastic Stockings, Suspensories. Correct deformities and all physical weaknesses.
A. J. PETTER, 109 Court St., Los Angeles

Main 4514 Home 3770
J. D. Robinson Co., Fruits and Produce
Consignments Solicited
Sole Agent for Little Gem Berry Baskets
Stalls 149-150-204-205 Los Angeles Market, Los Angeles, Cal.

S. E. Knapp, Pres. C. S. Marston, Vice-Pres. L. Shorten, Sec. H. E. Houk, Treas. & Gen. Mgr.
United Marketing Co.
of Los Angeles
General Receivers and Distributors of Fruits and Produce in Car Lots
Sunset Phone Broadway 5362. Codes: Armsby's and Revised Economy. Cable Address "United"
Location of Salesrooms, Warehouses and Receiving Platforms on S. P. R. R. Tracks adjoining Los Angeles Market. Offices: 208-9-10 Market and Produce Bank Building, Third St. and Central Ave., Los Angeles, Cal.

THE
Killefer Clean Cut Weeder

Is just what the name implies. It is the most effective tool for keeping down the growth of weeds after rains or irrigating on orchard, beet, bean or grain land. It does twice the work of any other tool with the same power. The knives overlap so it is impossible to miss any weed. Built in 6, 8, 10 and 12 foot sizes. The patented knives are so formed that they wear uniformly from heel to point, causing them to wear twice as long as any other blade for the same purpose. It is *the* tool for weed killing on any kind of cultivated land. Blades can be attached to cut in or out as desired.
The Killefer-Griffith Mfg. Co., 1336 Palmetto Street, Los Angeles, Cal.

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GASOLINE AND DISTILLATE
ENGINES
SAVE
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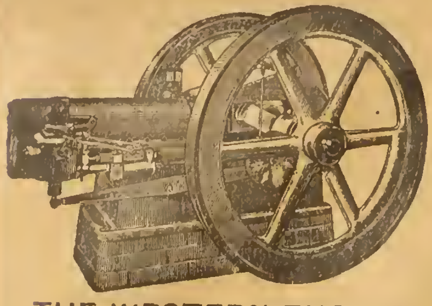
IN TIME
IN WORRY
IN REPAIRS
IN FUEL
IN WEAR
CONSEQUENTLY $$$ THE BEST
2½ Horse Power - - - $125.00
5 Horse Power - - - 185.00
10 Horse Power - - - 375 00
INTERNATIONAL GAS GENERATOR and POWER CO.
717 NORTH MAIN STREET, LOS ANGELES, CAL.
Are YOU interested in $$ along our lines? If so, write now.

DON'T BUY GASOLINE ENGINES *Until You Investigate "The Master Workman,"* a two-cylinder gasoline engine superior to all one-cylinder engines; revolutionizing gas power. Cost Less to Buy and Less to Run, Quickly, easily started. No vibration. Can be mounted on any wagon at small cost—portable, stationary or traction: 5, 7, 10 and 15 horse power engines in stock at Oakland. Mention this paper. Send for Catalogue.
The Temple Engine Co., Mfrs., David Rutherford, Agent, 1396 Harrison St., Oakland, Cal. THIS IS OUR FIFTY-THIRD YEAR.

THE WESTERN GAS ENGINE



THE WESTERN ENGINE
Maximum Power at Minimum Cost

"From Factory Direct to User"

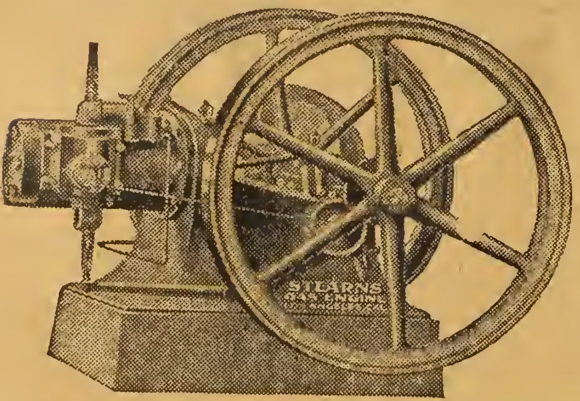
Designed and built by Western experts for Western use with Western fuel. In construction the Western embodies many original, yet practical ideas, which place it in advance of any other make on the market today. The simplest, strongest and best engine for

Irrigation, Power and Electric Plants.
Any Size from 5 to 500 H. P.

Burns cheapest fuel—gasoline, distillate or crude oil—with a saving of 20 to 40 per cent over any other style. Send for Illustrated Catalogue fully describing every detail of construction; tells how and why the Western excels all others; it gives the facts—the proof. Learn what Western engines are doing for others. Send your name today—ask for latest issue. A6.

WESTERN GAS ENGINE CO.
908-932 N. MAIN ST. LOS ANGELES, CAL.

STEARNS GASOLINE OR DISTILLATE ENGINE



Has many points superior to any other engine.

Hundreds in Use

Every One Satisfactory

Built for California cheap fuel.

For further information, write

STEARNS GAS ENGINE WORKS
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NATIONAL WOOD PIPE CO.

MADE FROM CALIFORNIA REDWOOD OR SELECTED PUGET SOUND YELLOW FIR

WOOD PIPE

WOODWARD PATENT MACHINE BANDED PIPE
WHEELER PATENT CONTINUOUS STAVE PIPE
BORED WOOD WATER PIPE

Puget Sound Office, Olympia, Washington
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San Francisco Office, temporarily located at 518 11th St., Oakland, Cal.

A booklet, "The Whole Story About Wood Pipe," mailed free upon request

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NO, THIS IS NOT AN ARTESIAN WELL, BUT

AN IRRIGATION PUMPING SYSTEM

SUPPLIED BY

S. J. SMITH MACHINERY CO.

POWER PLANTS, PUMPING MACHINERY AND WATER SUPPLY GOODS
212-214 S. Los Angeles St., Los Angeles, Cal.

WATER IS KING

pump your own water by cheapest known method. Write A.T. Ames, Galt, Cal. for catalogue

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Caustic Soda

60%, 70%, 74% 76%, 78%, 99%. Powdered and Solid. Full information cheerfully given. All goods guaranteed.

M. Bettman Co. 1355 Post St. San Francisco

The Haynes Gasoline Engine

Simplicity is its feature. You do not need to be an experienced engineer to operate the Haynes. My prices are the lowest for a first-class engine. Guaranteed.

I install Irrigation Plants complete. Send for Catalogue and Estimates.

Molbry Haynes
246 N. Hunter St. - Stockton, Cal.

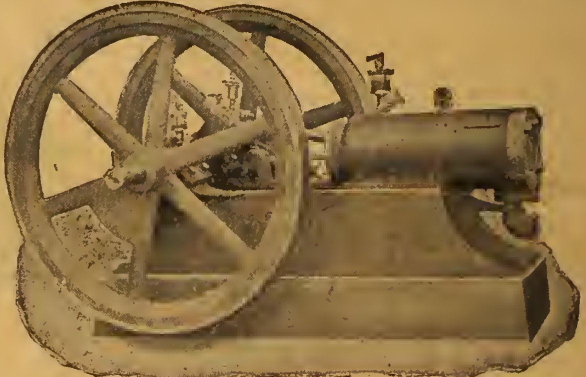
THE CALLAHAN DISTILLATE ENGINES

A First Class Engine at a Moderate price. Four Carloads have arrived since the fire.

Three Carloads of **Centrifugal Pumps** in Stock.

G. W. PRICE PUMP CO.
Temporary Office
101 Eighth St., Oakland, Cal.
Telephone Oakland 4376

Samson Gasoline and Distillate Engines



Are Strong and Durable

Fully guaranteed in every particular.

We make complete Irrigation Outfits.

Samson Centrifugal Pumps

Are the best. The enlargement of our factory makes it possible for us to make prompt delivery.

Send for our new catalogue and estimates.

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Office and Factory: 1100 to 1198 Aurora St., Stockton, Cal.
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P. K. WOOD'S

Improved Deep Well Propeller Pump

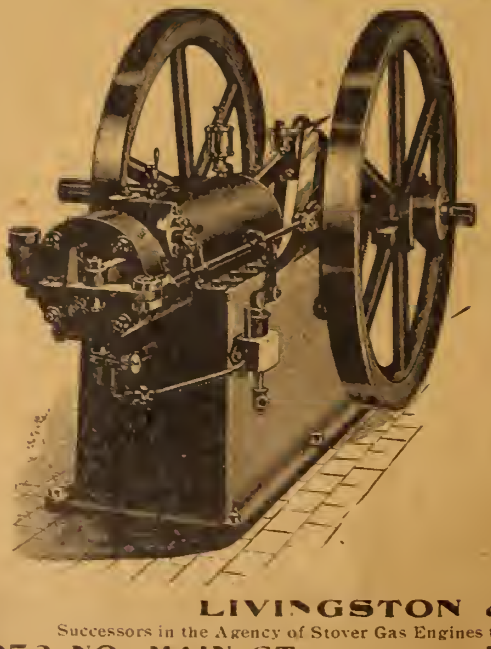
FOR IRRIGATING AND MINING

After devoting several years to deep study and experiments, and the expenditure of many thousands of dollars, this pump has been brought up to the point where it is practically indestructable, has an efficiency not to be excelled, and is ready to try conclusions with any deep well pump on earth. The principal improvement consists of a screw guide inserted in casing cupling and a ball bearing placed in each guide, which gives absolute protection to all parts of the pump, regardless of the amount of sand or grit which the water may contain. Write for catalogue and full description of these important improvements.

P. K. WOOD, Patentee and Manufacturer
702 No. Main St. *Los Angeles, Cal.*

STOVER GAS ENGINE

Less Working Parts Than Any Machine on the Market



Let us figure on your pumping plant. Prices will compete with any standard machine.

Stationary, Traction and Portable

Before you buy write for information or call and see one run. Get our prices on 2 to 40 H. P.

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Successors in the Agency of Stover Gas Engines to Commercial Engine Company
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CALIFORNIA CULTIVATOR

DEVOTED TO AGRICULTURE IN ALL ITS BRANCHES

LOS ANGELES JUNE 28, 1906 SAN FRANCISCO

Loretta D, 141708, champion cow of all breeds in St. Louis dairy test, 330 lbs. butter in 120 days. Scored 90½ counts out of the hundred by Prof. Jas. Withycombe. Udder and milk-veins almost perfect. Now owned by Estate of W. S. Ladd, Portland, Oregon.

Diploma's Brown Lassie, 166688, second cow in order of merit in the St Louis dairy test, 312.56 lbs butter in 120 days. Scored 92½% of perfect scale of points by Prof. Jas. Withycombe. Now owned by the Estate of W. S. Ladd, Portland, Oregon.

RYE.

Rye is not half appreciated by the American farmer. It is very hardy, will grow on the poorest land, makes good winter and spring pasture, and if sown early enough makes good fall pasture. It is a good spring soiling crop, giving the earliest bite of green stuff. It makes a fair quality of hay if cut in bloom or before, and its straw always sells at good prices and makes the best of bedding for cattle and horses. It is also an excellent green manure crop for turning under in early spring. While it does not add nitrogen as the clovers do, it makes a great deal of humus, and thus improves the texture of wornout soils. It will grow in any section that can grow any of the small grains. Where corn or potatoes or cowpeas are grown after corn, rye may be sown in the corn at the time of "laying by," or may be sown on the stubble after the corn is cut, and be plowed under in the spring for any of the crops mentioned.

MITES AND LICE.

At this season of the year poultry of all kinds are infected more or less with lice and mites. There is a marked difference between the red mites and lice which is not easily distinguished by the average poultryman. Red mites are the insects that are often found on the roosts, walls and in the nest boxes of the poultry houses. They breed in the cracks and crevices of the woodwork. They are more like a minute spider in form than a louse. The Prussian Remedy Co. of St. Paul, Minn., make a liquid lice killer which they claim is a most effectual remedy for lice and mites. It is called the Prussian Lice Killer, and is applied thoroughly with a paint brush to the walls, roosts and nest boxes or with a sprayer. They advise the use of a sprayer as the vermin are killed both by the vapor and by contact with the liquid. They say that once rid of the vermin a light spraying on the roosts and in the nest boxes will effectually prevent them from appearing again. The use of the Prussian Lice Killer is very inexpensive as a 50 cent can is sufficient for the season for an ordinary flock. They also make the Prussian Lice Powder, a very effectual remedy easy to apply for dusting into feathers and the nest boxes. The Liquid Lice Killer is put up in 35c, 50c and $1 cans and the Lice Powder in 25c and 50c packages.

The country about Banning produces (this year) about 12,000 tons of hay and 60,000 sacks of grain.

Attention is called to the announcement in our advertising columns of the firm of Miller & Cahill, 1114-1116 J street, Sacramento, who make a specialty of manufacturing tanks, pumps, water pipe, well casing and pump valves. They are also agents for Aermotor Windmills. They succeed the old and well known firm of Miller Bros. & Co., and will take pleasure in quoting the lowest prices for first class goods.

The advantages offered students attending the Stockton Business College are briefly set forth in their advertisement in this paper. It is one of the oldest and most successful schools in the State and our farmer boys and girls who may be thinking of taking a business course should write this college for circulars and course of study.

DO YOU SELL EGGS?

Business is BUSINESS—and every man to his trade. Your business is what? Raising chickens—with an object—to have **eggs to sell.** Therefore **your business is making eggs.**

Do you make much money at your business?

You are laboring on day after day, in the same old way—and with the same small amount of profit.

WHY NOT MAKE MORE PROFIT?

You know how much you can sell your eggs for. So to make more money you must produce eggs for less cost and **produce more of them.**

CONSIDER AN EGG.

An egg is almost life itself—placed in a certain temperature, it hatches out into a **living, growing chick.** An egg therefore is very nutrious. One egg being equal to one pound of beef. An egg must contain everything needed to make a complete chick—including bone, feathers, flesh and blood, etc. Consider then what a hen must do to make an egg. She can only get the material from what is fed to her. An egg weighs about two ounces or more. Now if a hen has to make an egg from such food as bran or shorts, or chop feed or wheat, she will have to eat a pound of feed or possibly two pounds to get enough material to make an egg. But if the hen has Blood Albumen protein and fat, or feed containing such, she can produce an egg from four to five ounces of such food.

LESS FEED AND MORE EGGS.

Now when poultrymen feed COULSON'S IMPROVED MASH EGG FOOD to their hens they do not have to feed near so much feed, and at the same time, get so **many more eggs**—thereby producing eggs at a **less cost** per dozen—and making much **MORE MONEY** for the poultryman.

COULSON'S IMPROVED MASH EGG FOOD is a very rich feed—it is made with choice mill feeds and mixed with GOVERNMENT INSPECTED MEAT PRODUCTS, and other needed nutriments, all the component parts blended together by an ELECTRIC MIXING MACHINE. So that in this feed, the hen gets all **material** for making a **complete egg**—without loss of time, for it is easy made soluble and the hen becomes a regular EGG MAKING MACHINE—producing as high as two dozen in a month, from one hen.

The attendant gathering eggs. Results from feeding Coulson's Balanced Ration Egg Food. Healthy hens and plenty of eggs. 800 eggs from 1500 hens. Note the nice, healthy appearance of the hens. Coulson's foods are fed exclusively here.

BUY THE FEED THAT MAKES THE MOST EGGS.

When you buy feed don't figure how many pounds or how many sacks you are going to get for so many dollars. True ECONOMY is in buying the very best: so says Hettie Green the richest woman in the world. Make money by using your brains—BUY THE FEED THAT PRODUCES THE MOST EGGS. The feed that MAKES THE HENS LAY the most eggs—and with the smallest number of pounds of feed. THE MORE EGGS—the MORE PROFIT for you.

10 POUNDS EQUAL TO 20 POUNDS OF COMMON FEED.

COULSON'S IMPROVED MASH EGG FOOD is such a rich. concentrated feed—containing cooked, evaporated Beef Blood, Baked Meat Meal, fresh fine ground bone, etc., also containing the substances called gluten, phosphorus and other egg making substances—that 10 gallons will make a meal for as many hens as 15 gallons of common soft feed, and 10 gallons will produce as many eggs as 20 gallons of common mill feed. Therefore, you save money by buying COULSON'S IMPROVED MASH EGG FOOD.

$2.00 PER HEN PROFIT.

If you want less eggs, feed less pounds of the feed—if you want all the eggs you can get, give the hens all they will eat, and each hen will turn this feed into eggs at the rate of a dozen and a half to 2 dozen eggs per month per hen and each hen earning from $1.50 to $2.00 a year PROFIT FOR YOU.

$50.00

400 HENS GIVE $50 PER MONTH PROFIT.

H. S. Selecman at Elmira has 425 hens that laid 570 dozen eggs in April and over 600 dozens in May.

For morning meals he feeds COULSON'S IMPROVED MASH EGG FOOD—at noon 1-3 COULSON'S MASH and 2-3 Barley, and at night Wheat.

COST TO FEED THE HENS PER MONTH.

14 sacks COULSON"S MASH at $1.85	$25.00
Barley and Wheat	20.00
Total cost for month	$45.00
600 dozen eggs at 16c	$96.00

RESULT—425 hens fed on COULSON'S IMPROVED MASH EGG FOOD over $50.00 per month clear profit, and eggs only 16c at that.

COULSON'S IMPROVED MASH EGG FOOD.

That's the feed that brings **results.** Each ton contains the cooked blood (evaporated and pulverized) of HALF A HUNDRED GOVERNMENT INSPECTED ANIMALS. It also contains phosphorus, gluten and many other good qualities.

It produces eggs for from 3 cents to 5 cents a dozen less than other feeds and it also makes more of them—therefore by feeding your hens this feed you make **more profit** of **many extra dollars,** each month.

Take a ton and give it a trial. Ask for it at the feed stores.

In case they don't have it, write us for prices.

You will make more $ $ $ than ever before.

Germain Seed Co., Distributing Agents. Los Angeles

COULSON POULTRY AND STOCK FOOD CO., PETALUMA, CAL.

CALIFORNIA CULTIVATOR

Vol. XXVI—No. 26 LOS ANGELES, CAL., THURSDAY, JUNE 28, 1906 Subscription $1.00 a Year

Methods of Grafting and Budding Grapes

By Prof. E. H. Twight

Grafting above ground was a common practice in the vineyards of the Romans, and their authors describe them carefully, while they hardly mention the underground graft. But for some reason, until recently most of these grafts tried upon the vines in modern times have failed. In the last ten years persistent efforts and successful experimentation in Europe have brought the discovery of new processes that have been very successful, and their use tends to become widely spread, though a few years ago the best authorities on viticulture condemned them.

* * *

Green Cleft Graft. This graft is used a great deal in Hungary; it is an ordinary cleft graft made on the green shoots of very young vines. The shoot used as stock is cut between the second and third leaves counting from the apex, and one and one-half to two inches above the third leaf. The scion is a similar shoot, the leaves of which are pinched. The ligature used is wool or raffia, and must be removed as soon as it begins to cramp the joint. This graft necessitates the decapitation of the stock, and is exposed to drying; and though used successfully on some vineyards of Hungary, it might not do as well in our drier climate.

* * *

Horwath Graft.—The Horwath graft consists in inserting a scion bud in the place of an eye of the stock; it is commonly used on fruit trees, but the excision of the bud on a vine cannot be done in the same way, because of the considerable protuberance existing at each node. The following method was adopted by Horwath:

A circular incision, penetrating the whole depth of the bark, is made 1-3-inch above and another the same distance below the bud; then on the right and left of the bud two longitudinal parallel incisions are made, joining the annular incisions. The bud thus prepared should be placed on a shoot of as nearly as possible the same diameter as that from which it was taken. But the indispensable point, which marks the difference between ordinary budding and Professor Horwath's method, is that the bud must be placed or inserted in place of another bud on a node.

The green shoot to be used as stock having been chosen, and on the latter the bud where the graft is to be made determined, the leaf on that node is removed. Two semi-annular incisions are made at the same distances as on the scion, and a single longitudinal cut is made passing through the bark, dividing the petiole in two and joining the annular incisions. Then with the spatula of the grafting knife the bark is lifted on both sides so as to form two flaps, as in ordinary budding. The flaps being open, the scion is inserted, the flaps brought over it and the joint ligated. A fortnight or twenty days after, this is cut off. This graft has given good results, but is a lengthy and delicate operation.

* * *

Salgues Graft.—The Salgues graft consists of fixing on a green shoot of the year an elliptic scion or shield carrying a bud at its center. It is budding, but so modified as to be considered a new method; the grafts obtained are perfect and the joints invisible except for a slight swelling.

On any internode of the shoot to be grafted a longitudinal incision is made with the grafting knife, penetrating the whole depth of the bark and about the length of the shield; with the haft of the grafting knife the bark is raised on both sides of the slit; the shoot is then bent inwards and the lips of the slit open easily. The scion bud is inserted and the shoot is left to spring up into its former position. The scion bud is then compressed by the bark, and the operation is completed by tying. The ligature should be removed a fortnight or twenty days afterwards.

San Joaquin Tokays. No Irrigation.

In order that the Salgues graft may be a success, it is necessary, first, that the stock should be in full sap, so that the lips of the slit may be easily raised; secondly, that the scion bud should be carefully selected.

When a green shoot is cut longitudinally on its entire length, different colorations may be noticed along the section; towards the apex the shoot has not yet begun to lignify, and the section is almost uniformly green in color, only slightly deeper above and below each node. The diaphragm of these can only be detected at the second or third node (counting from the top) by a slightly lighter color. Downwards the diaphragm becomes more distinct; finally, still lower, the pith begins to be indicated by a whitish tint; the scion bud should be taken only from the buds in which the diaphragm is already well apparent, but on the part of the shoot where the white pith is not noticeable. Each shoot will thus give two or three good eyes.

In practice, when one tried to bend a young vine-shoot there is no resistance at the top; then lower down it resists, and still lower down it does not bend but breaks. When the fingers can easily bend the shoot and feel a slight resistance, one is sure that the bud in that region, together with the one above and the one below, are suitable for budding. It is necessary to tie the grafted shoots to a stake, as they are thus better protected and do not dry out as easily as when close to the ground. This graft is simple, gives perfect union, and is getting to be very generally used. It is of great value in re-establishing vineyards on resistant stock.

The Salgues graft may be performed on mother stocks of American vines through the summer as shoots develop; one can bud sixteen inches apart on the canes with the object of obtaining grafted cuttings for the next season. We have seen contracts given out for this work for $6 a 1000 knitted grafts.

* * *

Besson Graft.—As stated above, the Salgues scion-bud is grafted on the internode of the shoot. The Besson graft like that of Horwath, is inserted on the node itself; but while the method of the Hungarian viticulturist is a true budding, that of Besson is an inlaying.

This graft is made in spring, at the same time as the ordinary bench graft. A special pair of shears is used, with curved blades perpendicular to the handle; it cuts and lifts the bud, the same operation being made on the stock and scion canes. The lateral portion detached must be a little under one-half of the thickness of the shoot; the cut is regularly curved and concave, and about one inch long.

On the stock, the second eye, counting from the top of the cutting, is cut out; while for the scion any one of the eyes on the cane is used. The scion-bud fits perfectly, as it is the same blade that makes the two cuts. The cuttings to be grafted should be sixteen inches in length their top being limited by a bud cut half-way through. The graft is tied with raffia, as in other bench grafts. So far, this graft tried on green shoots has not been a success, but on the ripe canes the results have been very good and the quality of the knitting is specially good.

* * *

Clarac Graft.—In the Claric graft, as in the Besson graft, a bud is substituted for another bud, but the process differs in many points. To prepare the stock an incision is made an eighth of an inch above a bud and the incision is continued in a straight section parallel to the axis of the cane, penetrating one-third of the diameter; the cut is stopped when the length is a little over the width of the blade under the base of the bud. The blade is removed, laid flat on the cane immediately under the base of the bud, in order to indicate by the width of the blade the point where the new transverse and oblique incision is to be made, to prevent the first section from spreading and to make a strong notch for the scion to rest upon.

The scion-bud is obtained in the same way, placed on the stock and tied.

Another way of making the Clarac graft consists in not removing the bud on the stock, only the longitudinal cut being made. The scion-bud is made in the same way but with a longer bevel; it is inserted in the slit prepared on the stock and tied. The bud left on the stock constitutes a sap drawer, which facilitates the knitting of the scion-bud. When knitting has taken place the stock bud is removed. The second method is more rapid. In both cases the ligature must be cut away three weeks after being made. Both methods have been successful.

* * *

Vouzou Graft. The Vouzou graft is a Salgues graft made with an old

Continued on Page 618

Deciduous Fruit Culture

WALNUT CULTURE.

According to present indications Southern California is not going to have a cinch on the walnut industry in the future years. The high price of nuts for the last few years has boomed the industry until nuts are being planted quite extensively in other sections. At Salem, Oregon, I am told by people who live there, that they think they have a good locality for growing walnuts.

A walnut tree near Salem produced the past year forty dollars worth of nuts, and indications are that walnut orchards will be planted quite extensively in that locality in the near future. When the right nut is found for each locality walnuts will be produced all over the Pacific Coast. This will take some time. so for a number of years yet Southern California will be the main factor in the walnut industry.

In setting out a walnut orchard there are several things to be considered: Location. soil, water, and the kind of trees to set out—seedlings, budded or grafted trees. If grafted trees are used the kind of root on which they are grafted is an important item.

The Santa Barbara soft shell cannot stand the extremes of either heat or cold. One year when the thermometer indicated 115 degrees for part of three days, we lost half our crop.

If the tree is on the soft shell root, the soil should be at least three and one half to four feet deep and free from any hardpan, as the root is so soft it cannot penetrate very hard ground. The deeper the soil the better.

It is much more satisfactory to have water to irrigate with when needed than to attempt to grow an orchard without it.

The grafted walnut can be put on several different kinds of roots: Its own root, the hybrid root, eastern black walnut, and the California black walnut root. By having a variety of roots to graft on we can at least double the acreage of the walnut industry in California. We can graft on the root that will grow the best on the land we wish to set out.

Black adobe soil seems to be one of the best on which to grow walnuts; the trees are very vigorous and the foliage a very dark green. I think this land will average a larger crop of nuts than any other class of soil. Alkali or salt land, if not too strong, if the irrigation is managed right, will grow good trees if budded on the wild walnut, while on the soft shell root would not grow at all.

When we have a dry year the orchard on this class of soil must be irrigated in winter before the trees start out or the growth of the previous year will die back, and in some cases the whole top of the tree will die back to the body; under the same conditions winter irrigation will bring these trees out in the spring without any die-back. Five years' experience proved the above to be correct in my case.

The wild walnut root will grow in soil that is too hard for the soft shell root to penetrate, and is practically gopher proof. They do not like and seldom will touch the root. The wild root has the disadvantage of being inclined to sprout, and the sprouts have to be carefully removed without injury to the bark. If you injure the bark, in some cases the wound will not heal, but will begin to rot and slough just below the ground, and as a result the tree dies.

In selecting trees for an orchard the indications are that the majority of the growers are going to put out budded or grafted trees, if they can get them, as the demand is far in advance of the supply.

In selecting a graded walnut it is better to select one of the quality that the market demands—one with a name and a pedigree; a record of how many nuts it bears; a blight resistant, etc.

In buying a budded nut without name or pedigree you are in the same position as the man who puts out a seedling orchard. You have to wait until the nuts come into bearing to prove what they are going to do. After finding a desirable seedling to graft from it takes at least seven years to get an idea of what it is going to do.

The Hinde's Placentia Perfection is one of the grafted walnuts that has been grown long enough to be known to the trade. We put out five acres of these nuts in 1898. We have kept a record of the nuts produced. The third year they produced ¾ of a pound to the tree, the fourth year 5¼ pounds, the fifth year 12 2-3 pounds. the sixth year 17 33-100 pounds, seventh year 33 2-10 pounds, eighth year, 29 39-100 pounds, being eight years out and producing 99 pounds of nuts per tree in all.

This is not a large yield, but part of these years have been bad for blight and this tree is not any more resistant to blight than the ordinary seedling.

It is hard to find the equal of the Perfection nut as to quality, and it sells at an advanced price.

Now that many nurserymen are studying the grafting and improvement of the walnut, we may look in a few years to have trees immune from blight and producing much larger tonnage per acre than we now get.

In setting out an orchard a very important point is how far apart to set the trees for the most profit. I have spent two years in gathering data on this point. I find in the majority of cases the most profitable orchards have been set 40 feet apart each way, and trees up to 15 or 16 years old in the orchard bear as many pounds of nuts per tree as trees set 50 feet apart each way. An orchard with trees 40 feet apart contains ten trees more to the acre than one with trees set 50 feet apart. The expense is about the same in each except picking and caring the nuts of the ten trees of the former, which is 1 cent per opund.

A seedling tree in good condition will bear on an average up to 16 years an average of 525 pounds of nuts. If nuts sell at 9 cents per pound, the product of the ten extra trees in the orchard will make a net profit in excess of the 50-foot orchard of $420 per acre. When the orchard with the trees 40 feet apart is 16 years old, dig out every other tree in each row—break joints, and leave them "quincunox," that will leave only four trees less to the acre than the orchard with the trees 50 feet apart.

The following figures show the yield of the Kossert orchard in Anaheim during the past four years: In 1901, 10.000 pounds of nuts; 1902, 5,900 pounds; 1903, 5,500 pounds; 1904, 6,500 pounds.

When you set out an orchard cut the trees off about five feet high; do it with a saw. Don't use a knife or shears. If cut with a saw they seldom die back to amount to anything, while if shears are used, they are inclined to die back more or less. Prune the trees as soon as the nuts are harvested, removing the branches that grow out from the under side of the lower limbs. This will relieve them of the weight and give them a better chance to grow up.—E. G. Ware.

FRUIT DRYING.

July ushers in the fruit season, and when the time comes there must be no delay, because delay always means loss from deterioration in the quality of fruit. Deciduous fruits must be watched very closely to get them in the best condition. If too green, the dried product will lack flavor, and if over ripe a certain mushiness will cling to the fruit when cooked.

As soon as apricots are out of the way peaches will come in. First the freestones and afterward clingstones. It is needless to say that the choicest dried fruits bring fancy prices and always find a purchaser when the inferior goes begging for a market. The extra care in drying first-class fruit is more a matter of individual skill and painstaking than of money, until ready to pack for market where a little extra expense is well laid out in improving the attractiveness of the fruit.

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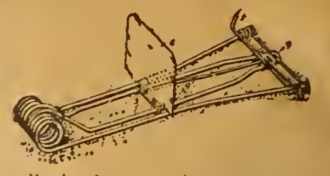

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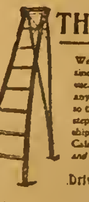

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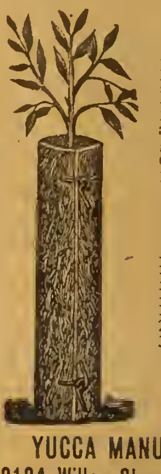

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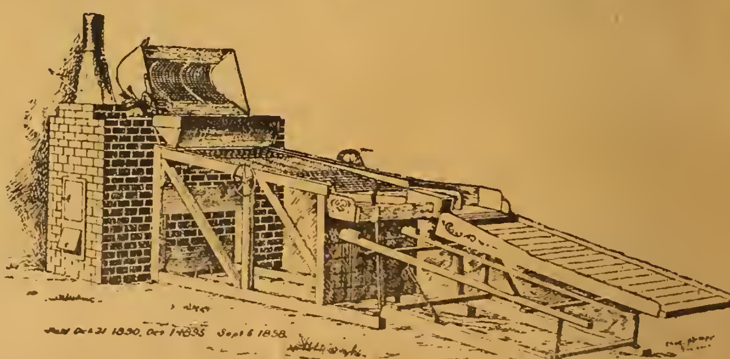

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Practical Farm Science

HONEY AND FOUL BROOD.

Elmer Todd, in the Bee-Keepers' Review, claims that it is safe to extract honey that is above a queen-excluder over a colony that has foul brood. While it is doubtless true that a large proportion of the honey in a diseased hive is not affected, I do not think it would be safe to depend on any of it being incapable of conveying the disease. A great deal of the honey stored in the super has first been stored in the broodcombs, in many cases at least. Indeed, I believe Doolittle claims that most of it has been so stored. If this is the case, it will be seen that any honey in the hive is liable to be infected, no matter how clean the combs in which it is finally stored. I am sorry to see such things published, because most people are entirely too ready to take chances with foul brood, and I wish I could impress it on their minds that it does not pay. There are some methods of dealing with foul brood that work all right in the hands of the expert and careful, but which leave altogether too many chances of spreading the disease when attempted by the average bee-keeper.—A. R. H.

NO SUCH ART.

At the meeting of the National Bee-Keepers' Association, held in St. Louis, a good deal of time was occupied in discussing how to overcome the widespread but erroneous notion that comb honey is manufactured by machinery. It is astonishing how even a false statement is relished by the people when seen in print.

Anything for a sensation, even if it must be denied the next day. And there are so many marvelous things coming to pass it is little wonder that people can't separate truth from error. No one who has ever had any practical experience with bees believes it possible to imitate the perfect comb by machinery. All bee-keepers laugh at the credulity of people who believe it.

REARING QUEENS.

Rearing queens is a very important part of apiculture. If we expect the greatest honey yield per colony, we must look well to the queens, as they are the life of the colony.

In rearing queens we must understand that the mother queen lays two kinds of eggs, namely, a fertilized egg and an unfertilized egg. The former hatches worker bees and the latter drone bees—worker cells and drone cells. The worker eggs are deposited in the worker cells, while the drone eggs are deposited in the drone cells.

By this we know what we are doing. We must not get confused by this wonderful freak of the little insect we call the honey bee.

I said the queen laid two kinds of eggs, and more wonderful still, three kinds of bees are reared from two kinds of eggs, namely, queens, workers and drones. Knowing this, we are ready to set about raising queens. Queens are raised from worker eggs or larvae by a special feeding process practiced by the bees. The feed, called in the bee world "royal jelly," is in reality pollen and honey predigested and fed in excessive quantities to the larvae intended to make the queens.

To raise queens I select a hive of bees that is in good condition as to strong stock of bees and good honey supply. I remove the queen say today. If she is a good one she is introduced into some colony where she is needed; if a bad one, she is killed. I allow this colony to remain queenless with all their brood for one, two or three days, or a sufficient length of time for the bees to begin to build queen cells on their brood. At this stage I remove all the brood leaving nothing except honey and pollen. The bees are allowed to remain thus for about twenty-four hours. By this time they realize that something terrible has befallen them, and to remedy it they know not how and would give their lives for eggs on which to start a queen. They are now in the proper condition to build queen cells, and don't you doubt it.

Having thus prepared my colony to raise queens. I go to my breeding hive and get some larvae just hatched. I cut the comb in long narrow strips, just one cell deep. I do not mutilate this one row of cells at all. To prevent mutilation, I use a sharp knife, heated in hot water, so that it will slip through the wax. I take an empty frame and attach these strips to the top bar with melted beeswax so that the cells will hang downward. I place strips thus on two frames from end to end and insert them in my prepared colony at the center of the brood nest. My part of the work being done for the present, I put on the cover of the hive and go at something else—the bees will do the rest.

Some two or three days later I go and peep into the hive to see what has been done. I usually find from fifty to a hundred queen cells started, and they would all hatch queens, but here is a trouble that I must remedy. I find that the bees were so queen hungry that they started a queen cell on all the cells inserted, or nearly so. The trouble is, the cells are too close together, and would only have a single partition between the young queens, and as the cells have to be removed to nuclei or elsewhere on the eleventh day from the time the cells were inserted, we must space these cells so that each cell will be built separately or in tubular form with its own walls all around. I take a small blade knife, warmed in hot water and destroy every other one or enough to space them properly, by cutting them out and destroying the larvae, I still have from twenty to sixty cells left for the bees to complete.

I have tried all kinds of methods to raise queens as advised by the bee world, and find this method far superior to anything I ever tried, both for simplicity and economy of time, and the best feature to me is far better results in every way. Should any of our bee friends try this method, remember by all means not to mutilate the cells given by cutting them down half way or just above the larvae, as the bees do not like it and will destroy fifty or seventy-five per cent. of the cells thus mutilated, as they nearly always remove the contents of the mutilated cells, in order to repair the damage done to the cell.

Allow me to tarry long enough to say for the sake of the new beginner in apiculture that the queen rearing should never be attempted except during a honey flow, the best time being at the beginning of a flow. At other times queens can be raised, however, but never so well as when there is plenty of honey to gather.—T. P. R.

UNRIPE HONEY.

It is interesting and encouraging to note the attitude that is being taken in regard to the extracting of honey before it is properly ripened. The great injury that has been done to the honey market by placing upon it an inferior article is apparently recognized as it never was before. It used to be taken quite as a matter of course that comb need not have more than about a third of its surface sealed when extracted. Nowadays it is pretty well agreed that it is better for the honey to remain on the hive for several weeks; and if it is all capped over so much the better. The question, "What proportion of a comb should be sealed before it is extracted?" always sounded to me very much like asking, "How much poor honey can you add to good honey without spoiling it?" Why not leave the honey in the hive until it is ripe. and have it all good? Of course, under some circumstances unsealed honey may be ripe; but usually a part, at least, of the unsealed honey is very poor stuff; and the man who puts honey on the market containing much of this is not only foolish but often wickedly dishonest.

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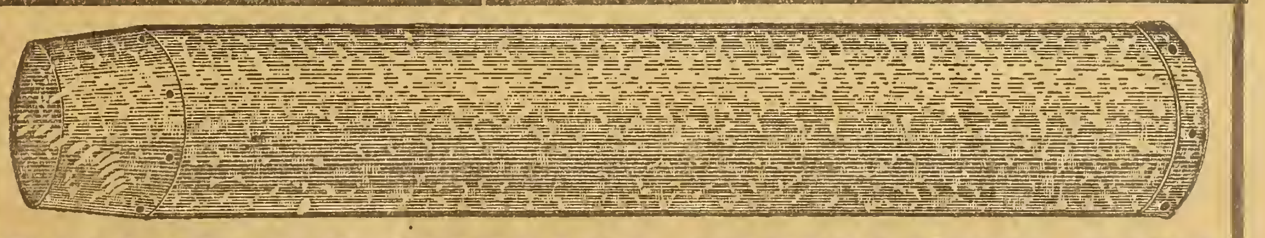
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POINTERS ON IRRIGATION.

"Water is king. Here is its kingdom." These familiar words were used for two or three years by a paper published in the great Imperial Valley. Since the words "here is its kingdom" have become too literally true, they are no longer kept before the public eye.

However water is king, not only in the Imperial Valley, but over much of Southern California, and other portions of the great West. To realize that some agent or element has wrought a marvelous transformation, we have only to remind ourselves that less than a century ago what now constitutes possibly the most valuable acreage property used for productive purposes in this country of incomparable wealth, was used by the Spanish and French sheep herders as grazing grounds for their flocks.

The development of water for these lands has made it possible to grow the magnificent citrus groves, the crops from some of which have, in the year 1906, sold for $1000 per acre—not the grove, remember, but one crop of fruit. Of course these are extreme cases, and do not properly represent the citrus business as a whole, but let us know what is possible under the most favorable conditions.

Without water the lands which constitute the citrus belt in Southern California would still be of comparatively little value. Intensive farming, the production of early fruits and vegetables, which always command good prices, will be done more and more upon irrigated lands. But this company is probably the most interested in the intelligent and economical use of water that we stockholders in the Temescal Water Company pay our money for.

Here I wish to say that soil conditions vary so greatly in different parts of our colony, changing seasons make so much difference in the same soil, that no specific rules for applying the water to the soil can be safely given. Of course the object to be attained is that each tree in the orchard gets sufficient moisture to keep it in a vigorous, healthy state, so that its productive power shall constantly be at the maximum.

There are two conditions of soil which may prevent a satisfactory irrigation; either it may be so hard as to prevent the water from penetrating to a sufficient depth to keep the tree in a vigorous condition, in which case of course a large per cent of the water runs off the land and is wasted; or it may be so porous and loose as to make it difficult to get the water down to the lower trees in sufficient quantities for a thorough soaking before the water moves on to the next grove, for with us we must irrigate while we have the water, not being able to keep it as long as we sometime may need it. In the latter case we may have had no waste water worth mentioning, and yet be very far from having a satisfactory irrigation, because some trees are thoroughly soaked while others have had little or no water.

Where one has a large orchard and can keep the water two or three weeks a very marked advantage is gained over an isolated ten acres which has the water two days in thirty or thirty-five, as the case may be. And by the way, we have abundant reason for thankfulness here in Corona, that the water gets around as promptly as it does in these later days. Seven years ago this summer we irrigated with 15 inch head once in 50 days, and our assessments were just as high then as now.

Now for the practical work. We will suppose that we have ten acres of grove and a 30-inch head of water for 48 hours with which to irrigate it. We want the land well furrowed; if possible, make the furrows so that when the water is turned in at the flume it will follow the furrow to the bottom of the orchard without turning to the right or left. Of course the number of furrows varies greatly with soil conditions. The least number I have seen used was two to the row; the greatest eleven to each space. Usually we have from three to six. I like to have as many furrows as I can get thoroughly soaked, starting the water in all at the beginning and letting it run in all continuously. After five years of experience I believe thoroughly in the zigzig furrow, which crosses the space lying between the trees that cannot be reached by the ordinary method of straight furrowing.

Theory and experience agree that a tree will have more vigor and productive power by making use of the patch of ground about 10 by 15 feet, which in our larger lemon groves would lie dormant during the later summer and falls months unless irrigated. We want our furrows opened to the flume, which must be thoroughly cleaned, with gates and stops regulated before the water is turned in.

In securing a good irrigation much depends upon getting a good start; thus we emphasize having everything in readiness. Where enough water for six or eight acres goes rushing down one furrow, possibly getting clear across the grove before it can be regulated, it silts the furrows over so that during the entire irrigation it would not take more than half the amount of water that it otherwise would, and of course does not penetrate as deeply as it should. The ideal way is to have a gate in the flume to open for each furrow. But alas, when there is much trash in the water it is necessary to have the gates open more widely in order to prevent their constant clogging, so we must run two or three furrows from one spout. This necessitates very constant watching to keep the furrows running evenly, as a very small object, such as a leaf blowing in and drifting down to the dividing point, may turn too much water from one furrow to the other.

Now having our water started in all the furrows, we want to get as even an irrigation as possible and still keep the waste water down to the minimum. Let us keep our furrows running just as even as we possibly can; go over, take notes, and regulate before noon. The first day don't trust too much to the eye; some furrows take more water than others. What we want is to have them get to the bottom of the grove, as near together as possible.

Now the question of waste water: Some think it unnecessary to have any. I do not think it pssible to get an even irrigation without having some waste water; it need not be a large amount. If two-thirds of the furrows are through the second morning it will keep you very busy during the day to keep them running and get the rest through before night. The last night all the furrows should be running through, though of course it should be a very small stream at the bottom of the grove. It is well to have a few rows at the bottom of the piece if the streams are coming through too strongly.

* * *

On our large lemon trees, I believe by heavier fertilization and having more water and getting it more frequently we could get heavier crops of fruit. From the 15th of June until the 1st of October the large lemon trees should get the water every twenty days to keep them at their highest production. During the summer six years ago we were able by reason of considerable extra water stock to irrigate between the regular irrigations, making the water come every twenty days. As a result no a leaf curled in the orchard durin the summer, and in October we picked 25,000 boxes of lemons. An abundance of water would bring on ou fall pickings earlier, make them heavier, thus greatly increasing our profits.

The development of water for th arid and semi-arid lands of the grea West is just in its infancy, an the not distant future will see portion of the great American desert supporting dense populations and wit a productive power never dreame of by the prairie states, famed th world over for their fertility.—Fran Thompson, before Corona Farmers Club.

The Salton Sea continues to ris and every week notes thousands o acres of farm lands inundated.

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With the Citrus Growers

ORANGE GROWING.

The orange is as staple as the apple. It is the standard dessert fruit of America. The demand for it is constant and always increasing. To meet this demand the business of orange growing has reached enormous proportions, and has become the leading industry of large sections. California and Florida are, and doubtless will remain, the two most important centers of orange production. Other States and territories, however, are becoming recognized factors in the production of this fruit. Alabama, Louisiana, Texas, and Arizona possess commercial groves which are being increased.

Entirely aside from the commercial importance of the industry and the profits offered by the business, orange growing possesses facinations making the occupation well nigh irresistable to those once subjected to its magic influence. Succeeding only in regions with climatic conditions nearly ideal for health and pleasure, with a harvest time when most other fruits and plants are in their unattractive period of rest, with the glistening dark green foliage contrasted with golden fruit, with the mild warmth of winter sunshine, with bloom of flowers and song of birds to add to the enchantment, with long periods of comparative leisure between the seasons of chief activity, with a staple product and ever growing demand, the orange grower is confronted by few vicissitudes and as many pleasures as fall to the lot of the producers of any natural product.

The business demands a high degree of skill, intelligence and professional ability of those engaged in it. There is a constant accession of new growers, seeking the rewards and health offered by the orange grove.

HARDY ORANGES.

J. L. Normand, Marksville, La., is breeding new varieties of hardy oranges. The hardy variety, Citrus trifoliata, is used as the male parent. Thus far one variety has been obtained which is considered of sufficient value to be placed on the market. This has been named "Carnegie," and is a cross with the Boone, which is a very early orange. The Carnegie averages over two inches in diameter, and is of good flavor, though not as good as really choice oranges.

CULTIVATION.

No hard and fast rule can be laid down for the cultivation of the grove, except that experience in all countries leads to the conclusion that orange trees should be treated as a cultivated crop, and be given careful thorough tillage during some part of each year.

Cultivation unquestionably stimulates root activity. It has, therefore become an accepted belief, that during the periods of dormancy of the tree, occurring in different sections at somewhat different seasons, cultivation should cease, that the natural recuperative rest of the tree may not be interfered with.

There is another reason why this period, existing chiefly in the winter, should not be disturbed, in sections subject to damage from cold. Cultivation brings the sap into flow. The more near perfectly dormant the tree is, when subjected to cold, the less the danger of injury. During the period of liability to serious cold, therefore, all working of the soil, with its stimulating effect on the roots, should be wholly abandoned.

TO PREVENT FROSTS.

Robert Nelson, in conversation with a representative of this paper a few days ago, gave a formula for protecting fruit from frost that is worthy of attention, and the experiment should be tried:

The plan is this: Place under the trees several vessels and fill them with water, then take a woolen string and fasten a rock or weight of some kind to one end of the string and tie the other end to a limb or twig up in the tree, and put the weighted end in the vessel of water.

Attach a number of these strings thus—the more the better—and the young fruit will not be injured by severe frosts. He says that ice collects on these strings very thick and can be scraped off. Mr. Nelson says he knows it will work for he has seen it tried many a time. The water or strings do not have to be removed during the day.

If the famous Luther Burbank would tell the people this, every farmer in the country would try it.—Lakeview Examiner.

It is expected that the coming state fair will be the greatest and most important ever held in California.

ORANGE SOILS.

The composition of any soil, as determined by analysis, has little bearing on methods of practical fertilizing. This must be true, from the impossibility of determining the amount of any soil constituent which may really become available, or possibly used by any crop during its period of growth. The chemical composition of the soil is now generally believed to be of less importance to the plant than the physical condition of the soil and its constituents. The composition of the soil, however, does offer some indication of its crop adaptations and general productiveness.

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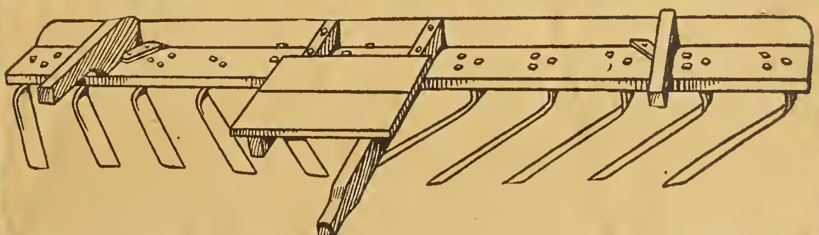

Is just what the name implies. It is the most effective tool for keeping down the growth of weeds after rains or irrigating on orchard, beet, bean or grain land. It does twice the work of any other tool with the same power. The knives overlap so it is impossible to miss any weed. Built in 6, 8, 10 and 12 foot sizes. The patented knives are so formed that they wear uniformly from heel to point, causing them to wear twice as long as any other blade for the same purpose. It is *the* tool for weed killing on any kind of cultivated land. Blades can be attached to cut in or out as desired.

The Killefer-Griffith Mfg. Co., 1336 Palmetto Street, Los Angeles, Cal.

The Ornamental Garden

BY ERNEST BRAUNTON, LOS ANGELES, CAL.

MOVING PALMS.

One of the most prominent tree-planters in the State writes us from Riverside to know how best to treat palms after moving. He notes that a newspaper writer advises no water for palms for several weeks after removal.

The correspondent says he has moved hundreds, watered them most abundantly from the very beginning and has lost none. Such has been the practice and experience of the writer, who has moved many palms each year, for many years and has never lost one.

To get down to the root of the matter as well as to the palm roots, let us consider where and under what circumstances our palms grow.

All species, in whatsoever clime they grow, are found where their roots may easily reach water. Even among the mountain species like Erythea Brandegei from Lower California, the plants are found growing in or near the bed of mountain streams. Down in the canyons and on the protected mesas of the desert our native fan palm grows where the roots invariably find water at easy distances. In the canyons may be found, for a large portion of the year, pools of water in basins of solid rock, into which palm roots fairly pour from every direction. Out on the desert borders the writer has seen where palms have been but recently blown over and the holes left by the uprooted trunk has very quickly filled with a brackish brine, too strong to drink.

Based on years of experience in the successful removal of large palms the writer has no hesitancy in putting forth the following as both the theory and practice attendant on success.

The time to move palms is at two different periods—one in spring before the growth has started through the stimulus of the winter's rains and the subsequent heat—the spring growth will then take place in the new position, in place of in the old. The other removal period is after the growth of spring has been exhausted and the palm has somewhat "cured up" in all its parts—has entered its annual resting period—is partially dormant.

The latter period is close about September 1st. If the palm is moved at this time and heavily watered it starts new seasonal growth then, for it has rested and there yet remains enough of warm weather to stimulate root action. When cold weather comes the palm again gets a rest for the soil temperature gets so low that root action is practically nothing. Small palms moved in the winter often decay from the unhappy combination of wet and cold. Older palms, even though all roots rot off, still have a reservoir of strength in their trunks which will manifest itself in "the glorious springtime."

The trunk of our native fan palm may be likened to a huge sponge full of water. The greater bulk is water. The writer has hewn chairs out of a section of trunk three feet in diameter and four feet long, which could easily be moved about with one hand, so light do they become when dry. Many desert ranchers place two uprights and a cross trunk to provide a rustic entrance to their ranch—a boy could almost put the hugh cross log in place. Visitors to Palm Springs may have noticed both above mentioned articles on the grounds of Dr. Wellwood Murray.

When palms are removed all water supply from the roots is cut off until new root action takes place, and to ensure success this water should be supplied the trunk—not through the roots, for their capillary powers have for the time being been destroyed—but by watering the trunk.

Six weeks ago the writer moved two fan palms in his own garden. Last night four pailfuls (large ones) were poured into the interstices at the top of each four foot trunk. Not a drop reached the ground! The trunks absorbed it all. No doubt all who have moved palms have noticed how the trunks shrink. This will not happen if treated as above outlined. The two palms noted are now putting forth their first new leaves—a wonderfully quick recovery.

Palms Growing in Water in a Desert Canyon.

The above practice is based on nearly twenty years of successful palm culture and we can assure our readers that if faithfully followed no losses will result, even though no roots are taken in the case of our native fan palm. Other species require more careful treatment, and some are extremely difficult to re-establish when once disturbed.

PALMS FOR STREETS.

Each year sees a stronger demand for the Mexican fan palm (Washingtonia robusta) for street planting. "Easterners" who reside here may cling to their foolish old sentimentalities about deciduous trees all they choose to; the fact remains that the tourist wishes to see the "land of the the banana and the palm" and we have to cater to this taste. Let us live up to our possibilities and have a tropic or semi-tropic vegetation on every hand. Every State in the Union can furnish bare branches in the winter season, why should we, when we have a climate all our own; and the same is copyrighted.

LET ROSES REST.

The chances are that you are getting no roses worth picking from your bushes and yet you are still watering them frequently and more or less thoroughly. Don't do it. If the bushes wish a rest and they are old ones, water no more until the hot weather is past. No matter if they drop their leaves; they will not die. When the weather becomes cool in the fall, cut out all small and useless wood—all that is diseased or in the way—all that sticks into the center of the bush and prevents free access of light and air. Cut back two thirds of the good canes remaining. Then water freely and often and you will have roses—roses you can conscientiously brag about. One of the most successful winter rose growers out in the Eagle Rock Valley, near Los Angeles, had no water to give his roses—not a drop reached them except from the heavens—in the long, dry summers they looked pretty tough, but the outcome was always the very finest crop of winter and spring blooms ever marketed. Try it—we have for years—it will bring the best results.

DEFINE WALKS AND BEDS.

While we do not like to see roads, walks, and beds and other divisions of the home gardens unduly accentuated, nevertheless such boundaries are often necessary in order to reduce the labor of caring for a garden. There must be something against which lawns and flowering plants may stop and go no farther. Soil under constant cultivation soon becomes higher than the enclosing paths, which are trodden down hard and consequently the water runs off and the plants suffer in consequence. If redwood boards are partly sunken in the ground to hold the water in, the labor and amount of water needed are both agreeably reduced.

THE GOOD OLD PEPPER.

During these hot days nothing about the farm home is so grateful as the "shade of the old pepper tree," and it takes but hot weather to bring out declarations of appreciation of this old time favorite. "Trees may come, and trees may go, but I go on forever." Thus sings the pepper tree, and not without justification. Truly it is the friend of all who live in the country and often is the only relief the landscape has about farm dwellings. For shade about the kitchen door, for screening the hot side of the house at noonday, for the children to play under, and eat lunch in the shade during the heated term, nothing surpasses the pepper. Plant one.

ALYSSUM.

These are pretty little plants for beds, vases, baskets, edgings or rock-work, blooming profusely all summer; useful also for winter-flowering. Very sweetly scented. Often becomes naturalized in California and runs wild.

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First National Bank, Los Angeles, Cal.

In the Vegetable Garden

BY ERNEST BRAUNTON

GARDEN CORN.

The soil requirements of sweet corn in California do not differ materially from those of any other State. They free, somewhat sandy loam, well enriched, will bring the best results. Three points must be borne in mind. The soil must be warm and at regular intervals the crop should be well irrigated; cultivation must be thorough and frequent.

Do not be in a hurry to plant, for if your ground is cold, or water stands on it nothing but failure will result. We are not so confined in planting season as our less fortunate neighbors on the other side of the Rockies, for corn planted in the garden at present will bring just as good crops as if planted earlier. Of course everyone wants early corn, but if corn planted in July, in ground previously irrigated, is given about three irrigations during the summer and at least as many good hoeings or cultivations, you will get first class corn.

VEGETABLE SOILS.

Many fruit growers are wasting their time and money trying to grow trees in a shallow soil overlying a strata of hard pan, with the absolute certainty of failure, more marked as the years roll by. Such soils make ideal gardens for intensive cultivation, and should by all means be given over to vegetables or grain. Some of the most successful gardeners we have in Southern California have settled, by choice, on just such lands.

POTATO DISEASE.

As the country becomes older, parasitic diseases and insects multiply. While in the great potato lands of the West the plant grows luxuriantly and is but little injured by blight or insects, even here in California, these often cause the loss of nearly one-half of what the land would produce without them.

There are several different diseases caused by different germs or fungi. These are often confused and though usually distinguished as blight, rot and scab, there are several kinds of glight, also of rot and scab; each due entirely different treatment. Just at present growers in parts of Northern California are forced to spray for a blight which seems hard, if not impossible to overcome, the spraying acting only as a preventive measure.

WATERMELONS.

Watermelons are strictly a hot weather crop, even more so than the cantaloupe, and the desert regions should provide us with the largest and sweetest. In general they like a sandy soil, but we have eaten very fine melons grown on black adobe a foot deep which had been filled over lighter soil, so that drainage conditions were good.

Planting is usually done in April and May except on the desert, but if you are in what is practically a frostless location you may plant now and get good melons for the holidays. If the late autumn proves warm the quality will be excellent. Cultivation should be kept up in field culture until the vines render further work impossible, but in the garden there is practically no limit to the time when the hoe may be used. It is advisable to cultivate melons as much as possible in order to prevent evaporation of soil moisture, for if possible they should grow without irrigation.

FOOTHILLS VS. LOWLANDS.

While the labor and water needed in the lowlands for general gardening are less than the foothill districts require, these conditions are not all "to the good" for such lands are practically unlimited in area and much colder in winter than those higher up. Along the foothills there is a longer season, beginning earlier, and lasting later. Some of these spots are practically frostless and vegetables can be put on the market at times of scarcity and the highest prices, and when the lowlands are bare.

FOR MAN OR BEAST.

Now that it is definitely known that carrots are health-giving food to all animal life, they should be found in every garden. They need not all be fed to your horse, which is very fond of them and for which they are a most excellent food, but eat plenty of them yourself. For asthmatics and those troubled with nervous ailments and diseases of the respiratory organs they are very beneficial. Upon this point all medical authorities are agreed.

In California we may grow them a larger portion of the year than falls to the lot of the "Easterner," and there is no valid excuse for being without them if you have a liking for this most excellent vegetable.

For carrots a deep and thorough preparation of the soil should be made and the crop must be kept in the best possible state from seed sowing until harvest. Unless you wish carrots tough in texture and strong in flavor you must see that they are never checked in their growth. Often a slight neglect will place them in the second grade of desirability for human food. If grown for stock of course no such care is necessary. For table use they should be crisp and mild in flavor.

PARSNIPS.

Sow the seed of parsnip as early as convenient in the spring in drills 18 inches to 3 feet apart. Thin the plants to stand 3 inches apart in rows. The parsnip requires a rich soil and frequent cultivation. The roots can be dug late in the fall and stored in cellars or pits, or allowed to remain where grown and dug as required for use. As soon as the roots begin to grow the following spring they will no longer be fit for use. All roots not used during the winter should be dug and removed from the garden, as they will produce seed the second season and become of a weedy nature. When the parsnip has been allowed to run wild the root is considered to be poisonous.

To prepare parsnip for the table, boil the roots until tender and then cut in slices and brown in butter. They may also be roasted with meat the same as potatoes.

LATE VEGETABLES.

Do not give up your home vegetable supply because the spring crops are exhausted. There yet remains plenty of time to produce the finest vegetables of many sorts. All that is needed is a little extra care and water above the amounts required for earlier plantings.

Beans, corn, potatoes, squashes, turnips, and many other table favorites may be planted during the next 30 days with the assurance of good crops of excellent quality. Lettuce and radishes will thrive in many parts of the state every month in the year and in nearly all sections for eight or ten months. Throughly wet the ground, plow as soon as possible, very deep, and cultivate and harrow until in perfect tilth. Then sow your seeds before the soil dries out at all and keep a good dust mulch at all times. When irrigation is necessary follow it closely and thoroughly with cultivation. This is more necessary in late crops than in the earlier plantings.

IRRIGATION.

Irrigation cannot now be avoided nor delayed. Except where the ground is naturally moist or damp from irrigation, the heat would finish the strawberry crop and where blackberries were far enough advanced the fruit would be apt to suffer. Everything should be irrigated during July—fruits, ornamental plants, vegetables, and field crop—in order to get the best growth of the season, which will show later on. The only exceptions to this rule are in the case of deciduous fruits that are near maturity, such as apricots and early peaches, which ought to have been irrigated sufficiently in June to carry them over until fruit is picked.

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To give you an idea how easy it is to can fruits, soups, vegetables, meats, etc., in the Economy way—Note the wide mouth—how easy it is to put your hand in and thoroughly clean the jar. No rough seams inside or out to catch lint, chip into food or scratch you. After pouring the contents in hot and wiping rim of jar, clap on the gold-lacquered cap (acid-proof.) No screwing, twisting or prying. Just press the cap on gently. No bruises, burns, cuts or sprains when you use the Economy. Put clamp on top to hold cap in position while contents are cooling. The cooling forms a vacuum and holds cap on firmly. Jar is then absolutely airtight. Next day remove clamp, which lifts off lightly. If the food was cooked enough cap is held tight by vacuum, and contents cannot spoil, as no air can leak in. If cap loosens, contents were not cooked enough to sterilize, and can be heated again and saved. The Economy automatically informs you if contents are in proper condition to put away. When ready to use, puncture cap with can opener and pry off lightly. No sprained wrists, no unscrewing, no hands gashed by broken glass. No glass particles in food; no smelly top; contents fresh and sweet as the day you put them up. No separate rubber rings required. The Economy is the jar you will use with comfort and satisfaction year after year. There is absolutely no jar that looks like, works like, keeps like, seals like, or opens like the Economy. Using some other jar *cannot* give you any notion of what the Economy really is and what it really will do. Try the Economy for yourself. Ask your dealer for it. Send his name and we will send you, free, a booklet of recipes. Write direct to main office.

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CALIFORNIA CULTIVATOR

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Thursday, June 28, 1906

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The True Patriot.—It is not the "spectacular" citizen who trots out his patriotism once each year, on Independence Day, that proves the mainstay of the country, either in time of dire need or in the conduct of its everyday affairs.

True patriotism in a citizen is a deep, strong, and abiding faith in and love for the country in which he lives, coupled with a determination to strive ever to keep it worthy in so far as the individual counts in the grand total.

Though we have many classes of citizens there are two that call for special mention: one, like the small boy, is overwhelmingly in evidence on all state occasions, while during the balance of the year he is unheard and unnoted except under the general title of "our fellow citizens." The other is the sterling patriot who works unceasingly and unflinchingly throughout the year for the uplift of the "masses" and the abolition of the "classes." We have too many of the former, yet all too few of the latter.

Life consists of something more serious than a little revelry on two or three great occasions each year and it is not the citizen who is in the midst of the firecrackers on July 4th who was found midst the fire and smoke of Gettysburg or Antietam. Too many parents allow their children to look forward to the coming of Independence Day as a time for making all the noise possible, entirely neglecting to instill upon their youthful minds a lesson in patriotism; often neglecting to even inform the child regarding the reason for such celebration.

We would not, though it were possible, deprive the young people of one jot or tittle of the enjoyment incident to the occasion but we cannot but feel that some restrictions should be placed on the celebrations of the unwise for the purpose of safeguarding the public in general. In California, owing to the dryness of our summers there is a larger amount of combustible material on hand than is possible in other states, and the danger is in consequence, much greater. Many municipalities have forbidden the use of firecrackers within their lines, others have reserved certain streets which must be left "bomb free." We believe the spirit which prompted these restrictions to be a good one, and if the "spirit is not manifest" in the proper manner that they will eventually be properly adjusted. We do not believe that in order to get all the fun possible out of a day, it is necessary to make all the noise possible. Such a belief harbored by a few is a legacy left us by our savage ancestors.

However, let us make the "welkin ring," in a right good, whole-hearted manner; let us perpetuate the day and the memories sacred thereto and seek to emulate our forefathers, in both spirit and action, as we believe they celebrated on that first memorable day of long ago. If we read history aright, though there was booming of cannon, and everybody was in "high spirits, it was rather a deep, joyous feeling of thanksgiving that filled each patriot's heart, at relief from burdens too great to be borne by men destined to be free. Let us approach the day in something of the same spirit, and with becoming gravity perpetuate the day, the greatest in our national history, as one to be remembered with reverence, and not to be entirely given over to frivolity.

* * *

Farmers' Institutes.—The institute season, both north and south, will commence not far from September 1. The State has been more equably divided than heretofore by adding the counties of San Luis Obispo and Kern to the southern district.

A few weeks ago we were fearful of being without a leader in either district. Rumor had it that Prof. W. T. Clarke had accepted a call to an eastern state and that J. B. Neff would run for Congress from the eighth district. It appears that Prof. Clarke has but gone east to inspect the field in which he has been offered a position as State Entomologist, with no assurance of acceptance, and the only "running" Mr. Neff contemplates is to "run" the Farmers' Institutes next year on more practical business lines than ever before.

With two such leaders as Messrs. Clarke and Neff the season opens under very promising circumstances and we may expect to see a renewed and increased interest in these great educational meets. Every year marks a deeper appreciation of these institutes, an appreciation confined to no section or state, but general throughout the country. Prof. Wickson, who superintends the work in this State has been careful to see that none but practical, experienced speakers are secured for the general lecture staff, people who have actually performed the work they are expected to talk about. He early recognized the futility of sending out speakers who were easily "called down" or "stumped" by a few practical questions. In consequence we have two staffs, one in Central California and one in the south, in which every member delights in being plied with practical questions by practical people. The outlook for the coming season is a glorious one and we confidently expect to be able to report to our readers at the end of the season, that both interest and attendance showed a marked increase over that of last year.

* * *

Forest Homesteads.—In all the forest reserves in California there are little spots containing the best agricultural lands that have been proven of no direct value to the government in the reforestation work and practically useless so long as these spots were not opened to the homeseeker.

Congress has just passed a bill which opens these fertile acres, with streams, springs, etc., to settlement by the public, on all reserves except those in the counties of Inyo, Tulare, Kern, San Luis Obispo, Santa Barbara, Ventura, Los Angeles, San Bernardino, Orange, Riverside and San Diego.

For long years our people have desired to enter upon these lands under law and make of them homestead tracts. They have long appealed to the Federal Government to list the tracts and declare them open to entry. Very many of the tracts have been occupied by settlers and upon some of them there are valuable improvements. In several districts the residents have been agitating the setting back of the reserve line from one to ten miles, because of the valuable mesa or valley lands contained therein.

This new law authorizes the Secretary of Agriculture, on application or otherwise, to examine lands in permanent or temporary reserves chiefly valuable for agricultural purposes without injury to forest reserves and not needed for public uses, and in his discretion to list the lands by metes and bounds, file the lists with the Secretary of the Interior with a request that they be opened to entry under the homestead laws.

Not more than 160 acres must be embraced in any one tract and not exceeding one mile in length. It is provided in detail how entry may be made, the posting of the lists, their advertising, etc. It is also provided that settlers who occupy in good faith any such lands prior to Jan. 1, 1906, and who have not abandoned the settlement and who are qualified to make a homestead entry shall have preference in right of settlement and entry. This provision will protect many deserving settlers who have made valuable and permanent improvements.

Each settler has five years when desiring it, to obtain a patent to any such lands, make proof of settlement, residence, cultivation, etc., and by means of a detailed formulae proceed to the end desired.

Settlers on any of these lands on January 1, 1906, who have lost their homestead privilege or have already exercised it, but are otherwise competent to enter lands under the homestead act, are granted an additional homestead right of entry for homesteading on payment of $2.50 an acre on making final proof, thus protecting the pioneer.

Of course there are a few exceptions to the general workings of the new law and no encouragement is held out to those who feel inclined to settle on lands not opened to the public, with the expectation of holding them until opened under the act, nor shall the act be construed to impair the legal rights of bona fide homestead settlers, who have established residence on public lands prior to their inclusion within a forest reserve. On the whole this enactment is of great importance to all secions of the State north of Kern and Tulare counties and will aid materially in the development of some sections now but sparsely settled and make possible the improvement of lands already in possession of the public, but useless through want of water only available by development and piping from forest reserves.

* * *

Farmers' Clubs.—We are willing, and anxious, to make a note of all meetings of Farmers' Clubs, subjects discussed and such other items as may be of general interest. A list of the questions considered by your club might furnish topics for those in other sections of the state; for lack of "something to talk about" of general interest is the rock upon which many a club has foundered. We should be pleased to have some officer or member in each Farmers' Club in the state keep us posted on all important points of their club life. Only a few days ago we received a letter from the secretary of a Farmers' Club announcing an annual picnic to be held in a large park, accompanied by a request for the names of secretary or other officer of all surrounding clubs so that an invitation might be extended to all to actively participate as guests of honor. Unfortunately we had but a few of the necessary addresses on hand. Let us hear from all.

* * *

The Farm Home.—Make the farm home attractive, inside and out. Too much attention is paid by many to the pecuniary side of farm life only. The most successful life is the happiest one, and we cannot be happy in a home where no evidences are apparent of love of the beautiful, where bare walls only are seen both indoors and out, where squalid, weather-beaten buildings rise from a dooryard of tangled weeds. We plead for both the boy and the girl. Have a few choice books, magazines and a daily paper on the table, well selected prints or reproductions of famous paintings on the walls, some of the better class of trees, shrubs, and plants in the yard, with order everywhere apparent. Such things cost but little and often make the difference between a place to live and a country home, between a house of strife and discord, and a happy family.

FARMERS CLUBS.

The Gardena Farmers Club will hold its annual picnic in Eastlake Park, Los Angeles, August 2nd, and all members of clubs who can attend are urged to call and participate for all will be made welcome.

The next meeting of the Covina Farmers Club will be held at the residence of the president, B. F. Thorne. Subject "Trees and Shrubs." Ernest Braunton of the Cultivator staff will be one of the speakers. Ellen Beach Yaw is spending the summer with her sister, Mrs. Thorpe, and it is expected this talented singer may be prevailed upon to render a song for the entertainment of the club.

NEWS OF COUNTRY LIFE IN THE GOLDEN WEST

HORTICULTURE.

Marysville is having a new cannery built.

Vacaville is installing a Cyclone Car Cooler.

Beets about Salinas were all planted by the 20th.

The grape crop in the Chino Valley will be light.

Winter Nelis pears are a failure in the Carmel Valley.

The Los Gatos fruit canneries employ over 400 hands.

El Dorado County now has a Horticultural Commission.

Thermal shipped Thompson's seedless grapes last week.

Yuba City reports a bran new cannery very near completion.

The walnut crop of La Habra will be the largest in many years.

Ontario wants women and girls for the local fruit packing houses.

Redlands reports that apricots are the best in quality ever grown there.

Huntington Beach has a huge canning factory under process of erection.

Southern California will have about 80 cars of apricots as against 300 last year.

Riverside orange growers say the "hot spell" was just what they needed.

All the Valencias from the Porterville-Lindsay-Exeter district have shipped.

Deciduous fruit shipments are 300 cars behind the record of last year, up to date.

Apricots are still going up in price, selling for $40 per ton and 13 cents when dried.

Napa will have a new cannery open about July 15th which will employ 500 persons.

It is estimated that most fruit crops will bring 50 per cent better prices than last year.

The Tulare County citrus fair will be held in Porterville the last week in November.

Peaches and plums from Sonoma country are sent down to Los Angeles every day.

Beaumont has picked about 50 tons of cherries and will have about 500 tons of apples.

Lemons, berries and many fruits and plants were damaged by the hot spell of a week ago.

Geyserville is building a winery a hundred feet square, with a capacity of 100,000 gallons.

The walnut crop in the country below Pasadena will be but 50 per cent of last year's yield.

One warehouse in Fillmore has sent away a car of fruit each day for more than six weeks.

On June 6th the supervisors of Lake County appointed a Board of Horticultural Commissioners.

The Highland Home ranch east of San Bernardino will pick 160 tons of peaches and 40 tons of cots.

San Bernardino County has a touch of pear blight, which is being stamped out by extremely vigorous measures.

At Fresno dried peaches are bringing 10 cents and apricots 15 cents, with chances good for a further rise.

All of Redlands Valencias have been shipped, in all about 600 boxes short of the number shipped last year.

A 3-year-old child at Redding found toadstools in the back yard last week and died within a few hours of eating them.

Lodi reports an unusually heavy apple crop at splendid prices, most of the fruit being sold already on the trees.

The San Jacinto apricot crop is a good one this year, the quality being way above that of the past several years.

The Los Gatos canneries never stop from Monday morning to Saturday evening. having both night and day crews.

San Jacinto's apricots, which are good in both yield and quality, have just begun to ripen. The cannery opened on Monday.

Grape fruit sold in New York last week at $11.25 per box, the highest price ever known. It was grown at Highgrove, near Riverside.

AGRICULTURE.

Glendora has a fine poptato crop.

Exeter will have a heavy cantaloupe crop.

Glenn reports a banner year for potatoes.

Prices of beets at Alamitos average $5.65 per ton.

The wheat crop about Lockwood will be a record breaker.

Thermal is harvesting the fourth crop of alfalfa this year.

The northern watermelon crop is said to be ruined by rains.

The Salinas Valley will have the best crops ever known there.

The Submarine reports that aphis are on the wane about Coachella.

The Visalia sugar beet plant will begin operations about July 15th.

Both old and new hay are bringing good prices all over the state.

Beaumont reports a crop of 37,000 tons of hay and 35,000 sacks of grain.

The Hessian fly is damaging wheat in San Benito County quite seriously.

The barley acreage in California is about 8 per cent greater than last year.

The Alamitos sugar factory is shipping 26,000 gallons of molasses per week.

San Jacinto has suffered from several grain-field fires during the past ten days.

Insects are damaging the bean crop about Oxnard, but beets are in fine condition.

Los Alamitos district will have by far the biggest beet crop ever harvested there.

A Monrovia rancher died on Monday from the effects of fighting fire in his fields.

The Imperial country wants a county all for itself, with Imperial for county seat.

A serious loss occurred near Tipton a few days ago from the burning of grain fields.

Floods from the San Joaquin have flooded thousands of valuable acres about Stockton.

Redlands reports a heavy crop of hay and grain, the barley crop being unusually large.

Last Sunday a fire destroyed a considerable acreage of fine barley near San Bernardino.

Tulare County will start a carload exhibit of her products eastward today (June 28th).

More than 1,00 acres of barley near Rialto was destroyed by fire the fore part of the week.

All sections of the state report a "hot Monday" that will go down in history as a 'sizzler.' '

The 1906 crop of tobacco in Mexico is estimated at 25,000,000 pounds, but it is said to be poor.

Wildomar had none of the late rains and all their unusually heavy hay crop belongs to class 1.

Wildomar reports that $15 f. o. b. Los Angeles has been offered for all the hay in that section.

A Los Angeles syndicate will colonize the Kraft ranch of 9000 acres in Tehama and Glenn counties.

Thirty-five hundred tons of hay and 1000 sacks of grain burned on a wharf at San Francisco last Monday.

Blanco potato growers are buying machines to spray their potatoes to kill the blight, which is very bad.

Headers are being used this year more than for many seasons past on account of the large acreage of fallen grain.

Owing to disastrous fires about the outskirts of the city San Bernardino has appointed two "official stubble burners."

Melons, tomatoes, and grapes are expected to fill ten to fifteen cars a day at Coachella for some days in the future.

Nine cars of cantaloupes left Coachella in one day last week, but the present week is expected to be a record breaker.

Marysville reports a very heavy cucumber crop—the largest in years—and heavy shipments are now being made to remote points.

W. L. Vail, the Los Angeles cattle man, bought a ranch of grazing land near Murrietta a few days ago, consisting of 45,000 acres.

Lake Tulare is higher than ever known, having passed the high water mark of 22 years ago (1884) several days ago. It has covered hundreds of acres planted to grain fields and orchards.

Prof. W. T. Clarke, assistant to Prof. Wickson in institute work, has received a fine offer from Alabama and has gone there to look over the field before he decides the matter.

A break in the levee along Kings river on Saturday has flooded the country about Lemoore and Grangeville and destroyed hundreds of thousands of dollars worth of field crops and orchards.

LIVE STOCK.

Santa Rosa is building a new creamery.

Eggs are selling for 22 cents at Santa Rosa.

Escondido shipped over a ton of live chickens last week.

Petaluma shipped a schooner load of hogs to Honolulu last week.

Saticoy, though a small town, shipped several carloads of mutton last week.

Fifty thousand eastern brook trout were planted in the Middle Tule last week.

A gang of chicken thieves are operating in the Two Rock Valley, near Petaluma.

Honey prices will go higher in the near future as the old crop is going and the new will be both light and late.

Cattle owners about Folsom will be four weeks late in getting to the mountain ranges, on account of heavy snows.

San Luis Obispo wants quite a number of work horses and the supply in all parts of the state seems to be short.

During the week ending June 16th Charles D. Pierce sold to various parties nine registered Holstein-Friesian bulls.

Ventura county ranchers are offered but 2½ and 3 cents for their best beef cattle and are casting about for a better means of getting rid of their surplus.

Stockton is only able to handle about 200 bales of wool daily and in consequence 35,000 bales are on hand and it is expected that it will take to January 1st to get rid of it.

A. R. Coulson has disposed of his stock in the Coulson Co. at Petaluma to J. T. Wilson, a capitalist of San Francisco. Mr. Coulson will go east and enter business there in a few weeks.

Two hundred thousand trout fry have been planted in the creeks about Watsonville, and before the season ends it is expected that one million will be placed in the various streams of the county.

J. F. Miller has sold to W. H. Brezee of Modesto two registered Holstein-Friesian cows, Armona Lonnie and Dolly Alma Strother. also the bull Escalon de Kol to L. P. Jacobson of Modesto.

LINER ADVERTISING

Advertisements in Liner Column will be charged 1¼ cents per word. No advertisement taken for less than 25 cents. Eight words to a line.

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BLUE ANDALUSIAN EGGS FOR HATCHING, from three noted strains, $2.50 and $3. Incubator lots $7.50 to $15.00 per 100. Mrs. T. R. Griffith, 3111 Walton avenue. Los Angeles.

FOR SALE—MY ENTIRE FLOCK OF beautiful Andalusians, on account of ill health. Mrs. J. S. Duff, 3145 Hoover St., Los Angeles. Cal.

Live Stock and the Dairy

BY MRS. MINNA. E SHERMAN, FRESNO, CAL.

THE SORGHUMS.

The sorghums are divided into three classes. that readily cross with each other, so that it is not uncommon to see some new variety advertised for a year and then disappear from the market, as it has merely reverted to one or the other parent and is no better than the older form. This also shows us that these accidental crosses if left alone perish, while if in the hands of a breeder they continue to improve by the careful selection of only the best and by the addition of new blood whenever is is necessary to strengthen some desirable quality in the plant.

For ordinary purposes the sorghums are divided into three classes. The Saccharine or sweet sorghums and the non-Saccharines and the Broom corns. While the Saccharine sorghums are the ones we have been taking up in the last paper a few words in passing about the other forms may not be out of order.

The non-Saccharine sorghums are divided into two leading forms. The Kaffir as red, white and black Kaffir and the large African millet often called white milo maize. The second form is the Dhoura family, in it are the brow Dhours, Jerusalem and Egyptian corn, branching Dhoura or sorghum, and the yellow maize. There are other names for some seed men's varieties that it would be impossible to place properly, except one grew them and compared them with the true type. The broom corns are well known and their use for brushes and brooms, while they are almost juiceless and tasteless yet they are only variations cultivated by man, and by long cultivation their character intensified.

In California, the Amber sorghums (brought here from Indiana, but originally introduced there from China,) is the common one planted by the farmers. It is very hardy and prolific, stands hardship well. I have now started to plant seed from a single head of a variety sent me from South Africa, called there Koomba. The seed is heavier than ordinary Egyptian corn and the head I have is very full. It is said to be a superior forage plant producing large abundant broad leaves, with a slender stem and a small rooting system.

The difficulty of producing a crop of sorghum seed in California is greater than in the East, here the birds take it nearly all. I have to cover the heads with cheese cloth that are selected to produce seed or they are shelled out before mature.

The orange sorghum is the heaviest grain producer of any of the varieties we have grown here at the ranch. This variety is also sold under the trade name of Nuazana. The other varieties that we know to be good producers in the San Joaquin valley are the Late Orange, Kansas Orange. Colman, Colliers and the Perennial Orange. this will often live over several winters if they are not unreasonably cold and frosty.

While sorghum requires more moisture than Egyptian corn it produces more feed to the acre, and can be used as a smother crop Now how successful this would be in California I do not know. Yet in parts of the United States I am told that if land is plowed that is foul with Bermuda grass and then raked and the Bermuda burned, the land then sown to sorghum and cultivated, the next fall again plowed and raked over and again sown to a crop of hay, and this repeated for two or three years the Bermuda is smothered out, for as far as we have been able to discover the Bermuda grass has only two enemies that is shading and lack of moisture. In California by turning it up to the summer sun in plow row will burn it out, but it also makes an unsightly field and injures the land by burning up the soil fertility.

I hope to be able next winter to begin a series of experiments looking toward the destroying of Bermuda grass. I will begin this summer by oiling with crude oil all the spots on the ditch banks that are furnishing seed beds, the persistent use of crude oil will end these place and I believe that there must be some way of ending Bermuda or it will end by being the only covering of the fields in California irrigated lands.

The greatest objection to sorghum is the fear of poisoning the cattle. The commonest form of trouble is merely bloating, this comes from over-feeding of any succulent food, either sorghum, green corn or alfalfa, by taking precaution it can usually be avoided. The ooher form of sorghum poisoning is rarer yet it is deadly and fearful when it does come. The plant at times, like the laurel, secretes poison in the form of prussic acid. This poison is so deadly that the Governments of the world are agreed that only the most limited quantities are allowed to be sold by the chemists and only of the weakest strength. If in full strength a drop on the head of a cat will instantly kill it. So it is no wonder that cows eating of the young green leaves where it mostly congregates, are dead before any help can reach them. The remedies used in the cases that are not instantly fatal are molasses, flour gruel, milk, melted lard, butter, cottonseed oil or any other bland oil or a couple of gallons of milk. The animals should be out of doors and have plenty of fresh air for the breathing is labored. Now how shall we know when this poison is likely to be produced? I wish I could tell you but I cannot; it seems to be a bit of malice in the plant that there is no reason for except original sin. It was thought that ill-grown, stunted, frosted or drought stricken sorghum was the cause, but later investigation show that none of these are causes, while there have been instances where the crop was nearly perfect that the "red flag" of death came forth to slay the innocent cattle. Ill grown food stuffs of any sort are often causes that make cattle ill, with gastric disorders, these are productive of loose bowels and straining, the best remedy for this is a pound of glauber salts with an ounce of ginger given as a drench. This to be followed with a dose of olive oil, say a pint in twelve hours after the physic.

The grain from the sorghums are of particular value in the poultry yard as Mrs. Basley has so often told you, pigs all like them, and we have often fed them to both horses and cows.

For Wooden Sole Boots and Shoes see O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

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See Our "STAR" Sanitary Copper Cooler and Aerator, complete with Seven-Gallon Tank,
ONLY $13.00
Will cool 45 gallons of milk per hour to within two degrees of temperature of water.
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Buying a Cream Separator
A little thought before buying a cream separator will save you a lot of hard work later on. Don't be talked into buying a machine with a high milk supply can—it's like pitching hay to pour milk into one. Besides it does n't cost any more to get an easy running

U.S. Cream Separator
with a low milk tank that a child can reach, a simple bowl that's easily washed, and a set of entirely enclosed gears, protected from dirt and danger. The U. S. holds the World's Record for clean skimming—it is the most profitable machine for you to buy, and will last a life time. Our handsome new catalogue describes in detail the operation and construction of the United States Separator. Many fine and accurate illustrations aid in making perfectly clear to you the advantages the U. S. has over all others. If you're keeping cows for profit, ask for our catalogue No. 20. It points the way to the biggest profits.
VERMONT FARM MACHINE CO.,
Prompt Delivery.
18 Distributing Warehouses.
BELLOWS FALLS, VT.
438

Prompt Delivery Assured California Customers from San Francisco warehouse. No delays. Address all letters to Bellows Falls, Vt.

Editor Cultivator: Will rusty oat hay have a bad effect if fed to horses? If so what effect will it have?—J. W., Downey.

While I do not know of any actual diseases arising from the use of rusted hay, and this year the horses will have to eat it in nearly every part of the State, I do not think they do as well or keep in as good order as on clean hay. They certainly waste it badly, so that it is not good to feed it without some grain; the stock that is not hard worked will probably be able to do with but little grain.

* * *

Dear Madam: Your article in the last Cultivator was especially interesting to me from the fact that we are just considering the purchase of a milk separator and are undecided as to the kind to get. We are much pleased with the catalog appearance and description of the Sharples but have never seen one and would like the opinion of one who has used them. We only want a small one and have wondered if they are as effective skimmers as the larger ones. We read your articles with much profit and pleasure and feel that your opinion would have much weight.

If you have had dealing with the Joshua Hendy Mch. Works of San Francisco do you consider them strictly reliable.

If you cannot recommend this machine, what small machine do you consider most satisfactory?—T. L. F., Charter Oak.

Yes, the Sharples is all right, and we can only again refer you to our article as to the best way to bargain for a separator. As to Hendy's, the late head partner was an esteemed friend of ours.

* * *

Cultivator's Dairy Editor: I want to get started in the dairy business, and I come to headquarters for information and advice. Beginners have a lot to learn, and I want to get started right. I own 320 acres in the Imperial Valley W 1-2 Sec. 31, 16-16, eight miles southeast of Holtville, under the Holt Canal; the soil is a sandy loam, perfectly adapted to alfalfa growing. I have 160 acres in alfalfa, and am now cutting 1 3-4 tons per acre from alfalfa just one year old. The foundation of my plant or factory, as the "Fat of the Land" man calls it, is all right, I am sure. I know of your success in the dairy business from favorable mentions in the press, and I also remember reading that you attended a Farmers' Institute held at Imperial about one year ago. I would esteem it a great favor if you have the time and inclination to do so—to tell me how to get started in right lines. My plan is to have cows, pigs and poultry, with bees to fertilize the alfalfa for seed, and later on I may have 10 or 20 acres of Malaga or Muscat grapes. In selecting a dairy herd, what breed would you recommend, and what particular strain of that breed? How many cows would you advise to start with, what age should be selected, and could I secure the services of an expert to select what I should have to start with? Have you some good good stock that you would sell? If so what does it consist of? About what price should I pay for good stock? How many cows can one man take care of? What wages do you pay? Do you find this kind of help always available? How do you manage your help, have a foreman, I judge, to look after each department? What will your herd average, per cow, per month, in butterfat, if it should be sold at prevailing market prices? What kind of a ration should I feed to cows in connection with alfalfa hay? and in about what proportion? Do you graze your alfalfa or feed hay? If you graze what feed do you use in connection with alfalfa pasture and in what quantity? Do you consider it economy, and the preservation of alfalfa to feed hay instead of pasturing? About how many more cows will 80 acres of alfalfa feed, cut to hay, as against pasturing the same land? My place is about 8 miles from Holtville, and Holtville is about 9 or 10 miles from El Centro by rail. Could I manage to deliver cream once each day by wagon at Holtville, and then forward to El Centro? I should be glad of any information of advice, not covered by the questions I have propounded.—J. A. W., Redlands.

The "Fat of the Land" man farmed with money after the fashion of Thos. Lawson near Boston, and I do not see that either of them had more than the fun of it as a return. They certainly had the ideal life, life in the country with money to help out Nature's schemes. Think of it! Ye Gods, what could not one do, with cattle, horses, trees, flowers, if the bank never sent you those nasty little notes, saying "Your account is over-drawn."

Now, you give me no idea how much you desire to spend, perhaps I should say invest, but I fear it will be spend if you do not intend to personally superintend your own herd. I sold my large herd when my health gave out for I could not hire the work done without constant supervision. The breeding of fancy butter cows must be done under some one that studies and love the breed enough to study out the qualities of the various strains, breeding out the weaknesses while increasing the production. If this double building up is not carried out and the cows merely pushed for production, the herd weakens and the cows cease to produce off-spring and the herd perishes. If you buy grade cows select by the use of the Babcock test. Then breed to the race of dairy cows you like best. There is no best breed of cows for no one could say with what breed you would succees best. I would say select the breed you believe you wish and write the secretary of the Association asking for information as to breeders, then go to them and talk to them about their cattle.

One milker in California handles thirty cows and does nothing else except feed them. Cows that are milked three time a day count for three ordinary animals. The wages of a milker vary from $30 to $50 a month according to the responsibility placed upon the man.

One foreman manages the ranch and a head milker looks directly after the cows, and reports to the foreman as to his men. If he is dissatisfied with any of them the foreman does the discharging and hiring, while the head milker sees and is responsible that the work is well and carefully done. Indian corn is the natural balance to alfalfa. We graze the older alfalfa, but the young fields are used for soiling and hay making. As to the damage the grazing of the cattle does to an alfalfa field, that depends more on the nature of the soil than anything else. When soiling cattle on green alfalfa considerable care is needed to keep them from bloating, but it is not hard to do, if attention is paid to not over feeding them at any time, and to begin by

Machine for Harvesting Corn, Sorghum and Cane Crops.

John Lynch Breeder of Registered **Shorthorns**
MILK STRAIN
P. O. Box 321 - Petaluma, Cal.

GEO. C. ROEDING, BREEDER OF HIGH-GRADE
Thoroughbred Holstein Bulls and Heifers
Thoroughbred Berkshire Boars and Sows
FRESNO, CALIFORNIA

Veterinary Instruments, Black Leg and Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

Cream Separators, all sizes, all prices. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

Warranted to Give Satisfaction.

Gombault's
Caustic Balsam

Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. ☞Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

Advertising Column for Members
OF THE
JERSEY BREEDERS ASSOCIATION
OF SOUTHERN CALIFORNIA

Organized for the general advancement of Jersey interests, to extend knowledge of their superior merits, for the mutual benefit of members, and to increase the profitableness of one of the State's greatest industries. Breeders are requested to unite with the Association.

BULL FOR SALE

Having sold my ranch I am forced to sell Golden of Biltmore. 60082, a grandson of Golden Lad's. Golden of Biltmore is one of the best, ***if not the best*** sire on the coast. several of his daughters less than two years old selling for over $200 each. Highest bidder for next sixty days takes him. If everything is not just as represented, I will give anyone the ***bull free of charge. I sell on merit.***

C. S. Burgess, Riverside, Cal.

Pure St. Lambert Bull
—ST. LAMBERT OF RAMONA, No. 62633,—
leads the Ramona Herd of Registered Jerseys of
Geo. W. Thomas, Riverside, Cal.

For Sale--Registered Jersey Bull Calves

About 6 months old, solid color animals and first-class in every particular. Out of as fine stock as can be found in this State. Tested dams. Detailed information on application. Address or call any afternoon.

Sterling Milk Company
Office, 205 Tajo Bldg., cor. 1st and Broadway, Los Angeles, Cal.

The Whiting Jersey Stock Farm Co.

Have moved their herd of Jerseys from San Bernardino, Cal., to the famous Imperial Valley, and hereafter their post office address will be Heber, San Diego Co., Cal., from which they will conduct all their business. Abundant green feed every day in the year will be of great advantage in the best development of our young stock.

Whiting Jersey Stock Farm Co., Heber, San Diego Co., Cal.

LEMONITA HERD
Leffingwell Rancho, Whittier, Cal.

Service bull "SARGENT FOX," 64833. Bred on the Island of Jersey. Sire, the great Flying Fox, that sold at auction for $7,500. Dam, Miss Sargent, reserve winner over Jersey; winner of seven first prizes and five championship cups. "One of the grandest cows the island has ever produced."

VENADERA HERD
. . OF REGISTERED JERSEYS

For Sale, yearling bull Ruth's Gordon King, No. 72360 A. J. C. C. He is of richest breeding on both sire and dam's sides. Also three richly bred heifer calves by Marigold's Exile King, from cows that are good yearly producers. For particulars write

GUY H. MILLER, RIVERSIDE, CAL.

OAKHURST JERSEYS

3 young bulls for sale by ***Golden Marquis,*** a prize winning son of ***Golden Lad.*** One out of a daughter of ***Flying Fox,*** another out of a daughter of ***Golden Lad,*** and a third out of a great ***Fountain*** cow,

L. BRADBURY - DUARTE, CAL.

Kings Victor King of St. Lambert

At head of herd. Young stock for sale.

H. N. WILLIAMS COMPTON, CAL.

only allowing a small quantity at first. There is no difficulty in delivering cream that distance, we have often for months at a time, sent cream to Los Angeles from here.

Indeed the southland would fare badly for cream and butter when over-run with Eastern tourists if the San Joaquin had not cream to spare. Now, my advice to you is if you have not a working knowledge of cows to study this summer at the University in the classes of Prof. Major and Ward and some of the others, particularly learn to score cows, and also the general principles of the animal industry. You cannot hire brains, the man that has them is too busy working for himself. It does not matter what your life calling may be, it is well to brush up your own grey matter. The mind is broadened and enriched by a study of the wonderful laws of life, that unfold themselves when the study of the domestic animal is taken up in a scientific spirt.

* * *

THE SAME OLD TEETH.

Mrs. Minna E. Sherman,
Fresno, Calif.

Dear Madam:

Fearing that postcard of inquiry I sent to the Cultivator office has not reached you. I ask you direct. I recently bought an old registered Jersey cow and find she has but three incisors which are on the sides of her jaw. Could I get false teeth for her or should I pull the remaining teeth. She is very poor.

Please answer through Cultivator.

Your respectfully, H. W. McK.

If the teeth are sore to the touch remove them, if not leave them alone, it is natural for cows to shed their teeth early. Feed the cow well on soft mashes and green stuff. It is difficult to make an old cow fat; without there is some very special reason it is not wise to buy one for family use as she is failing and about the time she is used to her home and milker, may be expected to become worthless. As long as the cow chews the cud there is nothing very wrong and it is the loss of the cud that the dairyman regards as serious. I think this covers the case sufficiently. M. E. S.

THE COST OF HORSES.

The New Hampshire Experiment Station has been keeping an account of the cost of feeding a horse that weighed 1200 pounds for a year, he being kept at moderately hard work, and finds that it costs $74.32. In round numbers, then it costs $150 a year to feed a pair of such horses, and the cost of shoeing would be about $15 more, while repairs to harness and keeping them cleaned and oiled would make another $10.

Then the ordinary farmer will not make such a pair of horses last more than ten years and many would use them up in half that time. Say that they cost $300, which is not a fancy price, and yet it does not mean a cheap pair that can do a fair day's work.

SHORTHORN RECORDS.

The American Shorthorn Breeders' Association is sending out blanks to all breeders of registered stock, for entry in the record of cows in appendix of the American Shorthorn Herd Book.

The rules of entry are:

1. Cows producing 8000 pounds or more of milk in one year will be eligible to entry in the Appendix.
2. The milking performance of a cow must be verified by the affidavit of the owner.
3. A cow cannot be entered in the Appendix unless her pedigree has been recorded.

All interested should address John W. Groves, Secretary, Union Stock Yards, Chicago, Ill.

No one can tell to a certainty, by the combination o f blood lines in the pedigree of any animal, says S. W. Parlin, whether that animal possesses the abliity to trot fast or not. That fact can only be determined by training the animal. The mysterious influence of what is called atavism, or throwing back, is such that if any one of the ancestors of an animal, within several generations, was lacking in speed abilitv. the animal may throw back to that ancestor, and inherit the same quality. The same is true of the animal with a fast record, hence disappointments have occurred in the past and are likely to occur in the future even when mares with fast records are mated with stallions that have taken fast records.

A WONDERFUL REMEDY FOR HEAVES.

Horses are more valuable today than they have been for a number of years. Persons owning horses that are troubled with heaves or cough should certainly be interested in learning of the Prussian Heave Powders, which are manufactured and guaranteed by the Prussian Remedy Co. of St. Paul, Minn. They have the exclusive right for the sale and manufacture of these powders in this country and sell them under an absolute guarantee to give satisfaction. This company has sold goods for over 20 years in this country, and today have a large trade in every State in the Union. We recommend any one having a horse troubled with heaves or cough to write to the Prussian Remedy Co. Price of the Heave Powders by mail 60c, at dealers 50c.

Butter, when put upon the market, contains in addition to the butterfat, salt, a varying per cent of water retained from the washing and some casein. This is the reason why it is usually figured that one hundred pounds of butterfat will make 110 to 115 pounds of butter. This will serve to explain the difference between butter and butterfat.

If you want to drive an old plug, keep tapping your horse with the whip.

The demand for good horses is far greater than the supply.

Too much corn is the ruination of many a breeding cow

Miller & Cahill
Successors to
MILLER BROS. & CO.
1114-1116 J Street
SACRAMENTO, CAL.

MANUFACTURERS OF
Tanks, Pumps, Water Pipe,
Well Casing and Pump Valves
Agents for Aermotor Windmills

See Us for Sanitary Milk Bottles. O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

Profit in the Poultry Yard

BY MRS. A. BASLEY, HOLLYWOOD, CAL.

TOPICS OF INTEREST TO POULTRY RAISERS.

In this week's mail I find a very kind and appreciative letter from one of our subscribers (Mr. A. D. C.) asking me to write on the subject of operating incubators. Regretfully, I have to refuse her request, because this is the time of the year when we are cleaning up our incubators and closing them for the summer, and here let me say, do be persuaded to clean them out thoroughly, and then if you fear, or if you even suspect there may be moth millers or any insect likely to invade your incubator, put inside it. on the upper tray, a saucer full of of sulphide bi-carbon. The gas from this is heavy, it falls instead of rising, and it is death to insect life. Shut the door and leave the saucer inside.

Incidentally you will find this an excellent remedy for moths in furs or flannels; simply put a saucerful of sulphide bi-carbon in the top of the trunk and by the next morning every moth will be dead. If weevils get into the chicken feed, or grain bins or beans treat them in the same way, putting a saucerful or more in the top of the bin, it will kill the weevils but will not injure the fertility of the beans or grain. Of course the bin must be tight or the fumes will escape, without doing the work thoroughly. Be careful in handling the sulphide as it is quite as explosive as gasoline. Do not go near it with a lamp.

Yes! we are putting away our incubators; some of us have had good hatches and some bad, and some intend, and wisely, to increase their out-put.

It will pay anyone to prearrange for their early hatches, by getting their incubators ready, send for the catalogues of the various makers, study them thoroughly; go round to the neighbors; find out from them which are the most successfully used in your own neighborhood, then decide upon the size you want; personally, I found the 200 to 240 size the most satisfactory and I usually advise beginners to get that size.

Then after setting them up according to directions, keep the directions on the incubator and read them each time you pass it, until you know them by heart and can say them as well as a sailor can "box the compass," backwards or forward or beginning in the middle. I tell you it pays to be thorough in anything. "Whatsoever thy hand findeth to do, do it with 'all' thy might," was my favorite motto. "Sister is misquoting scripture, mother," said one of the boys.

"That is the difference between your work and sister's, you don't even play all your might," and the fault of misquoting scripture was in that instance condoned.

Another seasonable thing to do is

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK

BUYS THE WORLD'S FAMOUS EGG FOOD NO. 4

MIDLAND

IF YOU WANT EGGS
YOU WILL FEED NO OTHER

Used by all the largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the **GOLD MEDAL** at the St. Louis World's Fair for greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1604.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A FILCHER, Commissioner.

And Now Comes New Reward for Merit:

Read the following telegram received from the Lewis & Clark Exposition at Portland:

"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

PETALUMA INCUBATOR CO.

Main Office and Factory, Petaluma, Cal., Box F. Los Angeles, 505 South Main Street
San Francisco Office and Salesroom, 33 Market St.

to thoroughly clean up the brooders clean them and disinfect them, don't leave them dirty or mites, ticks, fleas will occupy them or the bacillus of tuberculosis may quickly propagate and be ready to prey upon your next season's chicks, in its insiduous way, and you will wonder why your luck has left you, and will say with many "I had such good luck last year. I don't know what is the matter, my luck seem to have changed." You are right, for last year you had new brooders, and you were in luck, it is true that a few of the late chicks dwindled away and died from no reason apparently; they seemed to grow smaller and ran about humped up looking like little old men, or a few may have had a little bowel trouble, and you write to the Cultivator asking for a cure for bowel trouble, and the poultry editor has replied "rice boiled in milk with a tablespoon of ground cinnamon to the pint of milk is the best cure for bowel trouble." Whilst all along it has been tuberculosis that somehow crept into the last hatch and there the germs are in the brooder awaiting for the next season to commence. How do you know that the tuberculosis germs are not in your brooder? Did you put it away clean? Did you wash it with scalding suds and put the cover out in the hot sunshine? Did you tear off and burn the old felt? Are you pre-arranging to have a run of good luck next season or are you (mis) quoting scripture and saying, "sufficient into the day is the evil," or "take no thought for the morrow."?

I always rest from hatching in July, August and September. We women need a rest then and a change of work, canning fruit and other pleasant household duties, so that it is a real rest to have a change of work.

But we must remember to get ready for next season's hatching, and we must fight the lice, mites, fleas, ticks harder now than ever, for this warm summer weather they breed and multiply in an astonishing manner.

I am sure some of our old subscribers will forgive me if I again give the recipe for the emulsion that I make for spraying the houses and which I also use for dipping the hens to assist the moult. I have reason also for repeating the recipe just now because in the government bulletin, given in a recent Cultivator the proportion of oil is twice as much as water and it will be found difficult, if not impossible to make it emulsify.

Raise Every Chick

If every Chick hatched last season had reached maturity in 60 to 90 days—hardy, strong and vigorous—how much extra money would you NOW have in the bank?

You could have SAVED these Chicks—every one—if you had used

Purina Poultry Feeds

—for one kind—Purina Chick Feed, is made on purpose to save the lives of little Chicks, and make them grow like weeds. And it DOES IT. Brings up the highest percentage of every hatch EVERY TIME.

The other Purina Feeds MAKE EGGS—make your hens lay all the year 'round—make zero weather eggs EASY. They do this EVERY TIME, and with EVERY HEN, too.

These may sound like "broad statements."

But don't take OUR WORD for it—try it—prove Purina Feeds yourself by feeding them to YOUR hens or chicks at OUR EXPENSE. If the RESULTS don't come, just tie up the bag and write us, and we will return every penny of your money, and tell you what to do with the unused feed. You are not out a cent in making the trial, for we will supply you through your dealer or direct, FREIGHT PAID, and the feed used in testing will cost you nothing.

This is the Money Back line ☞

Ask for particulars about our FREE TEST Plan. Write today—you can't afford to wait.

ACME MILLS CO.

PACIFIC COAST MANUFACTURERS
PORTLAND, OREGON

Take one gallon of boiling water, dissolve in it one bar of laundry soap, or one pound of soap powder, when dissolved remove from the fire and add one gallon of kerosene and one pint of crude carbolic acid. Churn violently till cold or till you want to use it. Take one quart of this, add to it ten quarts of water, warm or cold, I prefer warm; spray your houses, coops, brooders, perches, nest boxes, etc.

For dipping hens, take one quart, add to it ten quarts of warm water; immerse the hen all but the head, see that every feather is soaking wet, look for nits (putting these feathers into a small can with coal oil and burning them up, when the performance is over).

Dip the hens on a sunny morning, so that they will not take cold. This dipping makes them look horrible, but helps them shed their feathers, entirely frees them from lice, and helps the new feathers to grow. One old poultryman said it so thoroughly cleaned his hens that he could not find a louse for three months but he added "it makes them look like fury."

The feathers soon change and even if they do look bad for a month, it is a comfort to know that they are clean. If the oil separates from the water, it shows that there is not soap enough in it; add more.

Then in the summer season we have to keep the pullets growing. Do you realize that your fall and winter supply of eggs depends entirely upon the way you feed and care for your pullets now? Now! not next fall. Do you realize that a June hatched pullet by proper care will be laying by Christmas. How? Comfort, exercise. Proper food. Same old text.

Comfort now means shade, shade, shade, as well as sunshine, clean fresh water, exercise, scratching, teach your pullets to scratch; it develops and strengthens the egg-making organs.

Proper food. You cannot overfeed a growing pullet—that may seem a broad assertion, but it is true. You can feed a wrongly balanced ration, but you cannot possibly overfeed a pullet with a rightly balanced ration.

Then another seasonable suggestion is sell off the cockerels, put an add in the paper "four or five hundred cockerels, just right for caponizing" and see how gladly some of the "Caponizers" will buy them, giving you more elbow room for the pullets and lessening the feed bill. Or if you want to keep them and caponize them or hold them over, separate the sexes, they will do much better.

* * *

ANALYSIS OF WHEY.

Mrs. A. Basley,

Dear Madam: As you cannot find the analysis of whey I take the liberty to give you some information about it. First bear in mind that there are two kinds of whey, sweet whey and sour whey, and therefore you find a big difference in the figures of the enclosed analysis:

	Sour.	Sweet.
Water	93.004	94,600
Fat	0,044	0,430
Protein (nitrogenous matter)	2,267	1,228
Sugar of milk	4,304	5,852
Ash	0,233	0,817

Sweet whey results from using rennet with sweet milk, sour whey from the natural souring of milk. Sour whey contains less sugar of milk than sweet milk whey and is more poor of ash but richer in protein than sweet whey. Whey is an excellent food for hogs, as its ash has a high content of phosphoric acid of kali and of lime, which go largely to the making of bone.

I cannot tell you the value of whey for chickens, but I saw, when I put skim milk and whey outside, the hens always drank of the whey first and left the skim milk. I guess the old hen knows all right what she needs for her health. I am, very respectfully,

MARTIN KIRSTEN,
Dairyman of the Patterson Ranch Co.
Oxnard, Cal.

We are sincerely thankful to Mr. Kirsten for his analysis of the whey. It is by giving one's knowledge so kindly and freely that we can help each other. I often wish that many of our readers would respond to our invitation and tell us something that perhaps they know better than others and so "lend a helping hand."

PACIFIC COAST SHOWS.

Sacramento, Cal., Aug. 25 to Sept. 1, 1906.—California State Fair Poultry Show. Secretary, J. A. Filcher.

San Jose, Cal., Nov. 12-17, 1906.—Sixth Annual Exhibition Santa Clara Valley Poultry and Pet Stock Association. E. Van Every, Secretary Eden Vale.

North Yakima, Wash., December 10-15, 1906.—Annual Exhibition of Washington State Poultry Association. S. H. Schreiner, Secretary, North Yakima, Wash.

Tacoma, Wash., December 17-22, 1906—Annual Exhibition of Tacoma Poultry Association. Mrs. C. A. Pratt, Secretary, Tacoma, Wash.

San Francisco, Dec. 3-9, 1906—Eighth Annual Exhibition California Poultry Association, J. C. Williams, Secretary, Fruitvale.

Fresno, Cal., Dec. 12-15, 1906—Eighth Annual Exhibition Fresno Poultry, Pigeon and Pet Stock Association, Geo. R. Andrews, Secretary.

Alameda, Cal., Jan. 9-12, 1907. Third Annual Exhibition Alameda County Poultry Association. C. G. Hinds, Secretary.

San Diego, Cal., January, 1907.—Fifth Annual Exhibition of Poultry, Pets, and Cats. San Diego Poultry Association (Inc.), Harry McIntyre, Secretary, San Diego, Cal.

Seattle, Wash., January 8-13, 1907.—Annual Exhibition of Seattle Poultry Association, N. Anderson, Secretary, Seattle, Wash.

Portland, Or., January 16-22, 1907.—Annual Exhibition of Oregon State Poultry Association, E. Carlisle and F. Fenwick, Portland, Or., Secretaries.

CITY ADVANTAGES IN THE COUNTRY.

Gradually the advantages of the city are being secured by country residents. The telephone, electric lights, mail delivery and other improvements are adding to comforts of rural dwellers as much as to that of the city people. Gas for cooking has been more of a luxury but it now rapidly becoming a necessity. Improved machines are giving a gas at a price much lower than the cost of city gas. And for a nominal initial outlay. One of the very best of these, is that manufactured by the Speer Gas Machine Mfg. Co., of 922-4 Santa Monica ave., Los Angeles, Cal. This machine manufactures gas from gasoline which gives a light and heat superior to city gas and at a most economical price. Three gallons of gasoline will manufacture a thousand cubic feet of gas. A beautiful illustrated catalogue is issued by the company which gives full information.

PUT NEW BLOOD INTO YOUR STOCK
For Sale, limited number five-months-old thoroughbred S. C. White Leghorn Cockerels, $1.00 each, f.o.b. Corning. ***Raymoore Poultry Farm, Box 41, Corning, Cal.***

Golden State Poultry Yards
Anything in Brown or White Leghorns.
Some Choice Cockerels For Sale.
T. E. MILLS - LORDSBURG, CAL.

WHITE MINORCA EGGS
Best of Stock. Great Layers.
$1.50 setting, $8 100, $65 1000.
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RUBEROID ROOFING
The peer of all with 14 years' record for durability and efficiency.
Cheapest because best.
BLAKE, MOFFITT & TOWNE
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Don't believe all we say, but just enough to buy our Poultry Foods
Ask your nearest dealer for them and take no imitations
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THE PACIFIC GUANO & FERTILIZER CO. Successors to N. Ohlandt & Co San Francisco, Cal.

Beef Scraps
GUARANTEED ANALYSIS:
Protein 65%
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Made of Cooked and Dried Livers, Lungs, Melts and Clean Scraps. No fertilizer ingredients in **these** Beef Scraps.

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GUARANTEED ANALYSIS:
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Made of Clean Beef Bones, surplus fat removed. Cleanest Raw Bone on the Market.

Pure, Clean Animal Matter Poultry Foods
WESTERN MEAT COMPANY SOUTH SAN FRANCISCO CALIFORNIA

PREVENTION ON DISEASE.

The rapid strides that poultry-keeping has made within the past ten years is evidenced by the enormous increase in the number of fowls now kept everywhere, with the result that there has been too much overcrowding, and consequently an increase in the spread of disease. I do not mean that the number of fowls altogether kept in the country is excessive. On the contrary we have not near enough yet. But the majority of people with limited space are disposed to keep many more than they have room for, and this overcrowding ends in disease breaking out and spreading to other places. Years ago it was a very rare thing to hear of disease among a farmer's fowls. They had plenty of air and exercise, with full liberty to go where they pleased, living nearly all their life in the open air. They may have been bad layers, especially in winter, but they had one good quality, they were very hardy. Now, however, one hears continually of diseases breaking out among poultry even in country places.

There are two reasons for this: one is that, as I stated, too many fowls are kept congregated together, and secondly they are not allowed sufficienty liberty to keep them in health.

If, instead of keeping large numbers together, they were scattered over the farm in small lots, a far greater total number could be kept and the tendency to disease much reduced.

People near towns with a limited space of garden or small piece of ground, should be very careful that they do not overcrowd, for in such places where there is no chance of a run over fields it is often very difficult to keep fowls in health, especially if they are on the same ground for years. By keeping no more than the space will hold, and by thoroughly cleaning and disinfecting all houses and runs at short intervals it may be done, and often times by strict attention and supervision good profits can be made.

Having said so much as to the chief means of preventing disease—plenty of space, liberty if possible, and thorough cleanliness—let us enter in more details in conection with this subject, which is most important to every poultry keeper.

I must confess I have very little faith in curing diseases of poultry, especially those of the more severe and contagious forms. Not that diseases cannot be cured; many of them can. But I find that a fowl that has had a bad illness is never the same again. There is always the danger of the disease breaking out again, and if bred from there is a tendency in the offspring to the same form of ailment. The eggs of diseased hens are not fit for food, and certainly the flesh is bad. What we want is thoroughly healthy and hardy fowls, and we cannot have these if we try to doctor up every sick fowl and breed from them. The best way is to get rid of sick birds as quickly as they appear, except in the case of simple ailments that do not seriously affect the constitution. Many a severe outbreak of disease, causing the loss of many fowls, would have been averted if the first birds attacked were killed and burned. I may say here in passing that burning is always the surest way to dispose of diseased fowls that are killed or that die. If buried maggots may make their way to the surface and be eaten by the fowls, probably spreading the disease.

But though I do not believe in trying to cure disease, I believe strongly in preventing them, and I also believe that most diseases that fowls are liable to can be prevented. Let us see how:

1st. By keeping none but healthy fowls.

2nd. By keeping their surroundings healthy.

3rd. By proper feeding and management.

To keep none but healthy fowls means that any that are reared must be bred from perfectly healthy parents, that never had any sickness, and that when birds are purchased inquiries should be made so as to ensure as far as possible that they have been always healthy. Besides this they should be placed in quarantine for a few weeks before being mixed with the other fowls. Oftentimes purchased fowls will develop disease by the change to a new place although when they first arrive they may appear quite healthy. Do not put them with the rest of the stock until they are carefully examined, after being left by themselves for a few weeks Even after this they should be watched occasionally, and if any of them appear sick the whole of them should be again separated. One cannot be too careful with purchased fowls, as by this means disease may break out through the whole stock. I have suffered myself severely in this way, and would warn all purchasers.

In the rearing of stock birds the chickens should be made as hardy as possible. There should be no pampering or coddling. Get rid of any delicate ones and keep none but the very best and hardiest for the breeding pens. But not only must we have healthy birds, but we must keep them healthy. The surroundings have much to do with this. The roosting houses must be well built, well ventilated, well lighted, and thoroughly clean. Remove the droppings every

White Wyandottes.

High scoring stay white birds. 1st Cock L. A. 1906 show and other winners. Eggs $1.50 to $3. per 13. $10.00 per 100. Mount Holly Poultry Yards, Hollywood, Cal. E. W. Preston, Prop., Sunset, Hollywood, 901.

Fairview Poultry Yards

Silver Laced Wyandottes—My breeders include 1st prize cockerel, 1st, 2nd and 3rd pullet at the late L. A. show; 1st cockerel at San Diego and 1st hen at L. A., 1905. Eggs for the remainder of the season, $1 per 15.

White Plymouth Rocks—Eggs from choicest pen headed by Fairview Prince, a son of our best laying hen, $1 per 15 for balance of the season.

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14 Ribbons at The Last Los Angeles Show.

Indian Runner Ducks' Eggs: $1.00 per 13, $3.00 per 50, $5.00 per 100. White Minorca and White Wyandotte eggs: $1.50 per 15, $4.00 per 50, $8.00 per 100. Eggs carefully packed and shipped any where.

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$1500

For the above sum, Captain Mitchell of Santa Barbara will sell his poultry business and good will. The outfit consists of 1000 Standard Bred S. C. White Leghorn laying hens and pullets and their fixtures, i. e., Brooders, Houses. Posts, 6 foot "Union Lock" Fence Wire, Etc., Etc.

Sales of eggs for hatching average 14,000 per year at $70 per 1000, and the net income per annum for the last four years has been from $1000 to $1500. For further particulars apply to

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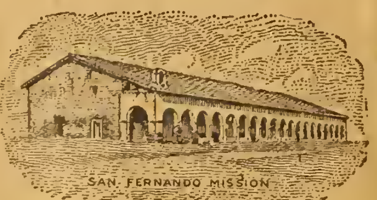

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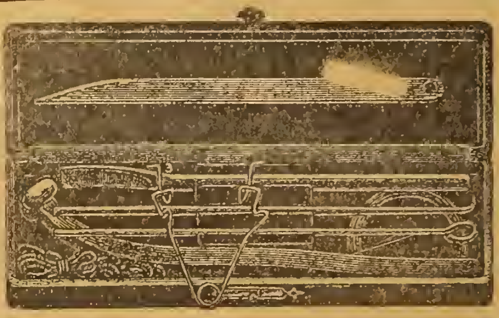

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If you have not yet used ***A. C. W. EGG FOOD*** and desire a sample, write to us. We will see that you get one at no cost to you. We know that you will continue to use the goods. We have made many customers in this frank way—try the goods and convince yourself. Talk is "Cheap and Plenty" on the Pacific Coast, so we don't expect you to take our word for it alone.

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Poultry and Eggs Wanted

SIX MONTHS TRIAL

This sign you will see hanging outside of a merchant's store in nearly every town on the coast and it, in a measure, must convince you that there is money in the poultry business, and the

Chatham Incubators

will assist you in making money. Any responsible person can get a genuine **Chatham** and have SIX MONTHS TO PAY FOR IT—what is the use of you paying out money for an Incubator when you can make it pay over and over again for itself?

I can give you hundreds of testimonials from customers all over the Coast who purchased Chatham Incubators and Brooders last season on our ON TIME PLAN, and are thoroughly satisfied with them. The manufacturers fully guarantee every machine. Write me for our catalogue and some useful hints on poultry raising—it will be mailed to you free.

Geo. W. Foott, Box 2040, Portland, Ore.

day, and keep the floor covered with peat moss or turf mould. If there is a tendency to damp, shake a little lime under it. The nests should be changed once a month, and a little sulphur or insect powder shaken into the fresh hay. The covered run or shed should be raked over every evening, and the scratching litter changed when it looks soiled. The open runs should be thoroughly dry by being properly drained, and should be raked and swept over every evening. Every part of the poultry yard and house should get a thorough cleaning and overhauling twice a year —whitewashing, disinfecting and burning rubbish. Powdered lime is a good thing to scatter over the runs when they have been dug and scraped over. Jey's disinfecting powder should be shaken in the roosting houses and covered runs occasionally. In fact, every part of a poultry yard should be kept so clean that neither the nose nor the eyes should be offended at any time.

The feeding should be of the very best description, and given in a clean and healthy way. Many diseases are propagated by the filthy way fowls are sometimes fed, throwing the food on dirty ground. Except there is a good clean grass run or field where the food can be scattered, troughs should be used, and these should be placed on green ground and in a way that the fowls cannot scratch it out. If the ground is not clean spread a piece of canvas over it, and on this put the troughs. Feeding troughs should be often cleaned.

Water is another fertile source of disease. Fresh water should be given every day, and the vessels well cleaned each time. I never use fountains. They are often only receptacles for dirt. A crock or other deep vessel easily cleaned is the best for water. It should be placed in a corner of the covered run, raised from the the ground, where the fowls cannot scratch dirt into it. Put a little iron into it in wet or very cold weather. Put a litle Epsom salts into it when the fowls seem out of sorts. Put a little camphor into it when disease breaks out.

EGG PRODUCTION.

A valuable lesson in feeding for egg production may be learned from nature. Fowls that are allowed to run at large and pick up their living about the ranch lay most of their eggs during the spring months.

Note the conditions that surround these fowls at this time; the weather is warm and there is plenty of food easily secured. This food consists of a mixture of grain and other seeds, green grass, clover, etc. The fowls get an abundance of fresh air and plenty of exercise, two important factors for egg production.

We should take the hint thrown out by nature and endeavor to make the conditions of springtime prevail throughout the year. Provide a cool place for the fowls in summer nad a warm place in winter.

Give them green food, grain, grit and meat when practicable, but above all provide pure air without drafts and plenty of exercise.

Corn alone does not form a good feed for laying hens, for it tends to the production of too much fat. If corn is allowed to form a large portion of the ration, a large amount of work must be provided. This may be supplied by scattering the feed deeply in litter so that the fowls must scratch for it.

Wheat forms a better food than corn, but a mixed ration is best. The fowls not only relish a mixed ration better, but such a ration will be more completely digested and assimilated than one composed of only one kind of food.

A ration made of corn, wheat, oats, barley, bran, shorts, clover or other green food, such as mangel wurzels, cabbage, etc., ground fresh bone and fresh meat scrap would, when properly proportioned, and varied from week to week, be excellent for egg production.

As to the proportions of the various kinds of food to use in making up a ration, space will not permit more than an illustration of the subject.

Pro. Wheeler of the New York State Experiment Station, suggests a daily ration made up as follows: Cracked corn, 1 pound; wheat, .75 of a pound; wheat middlings, .5 of a lb. buckwheat middlings, .5 of a pound; animal meal, .5 of a pound; fresh bone .66 of a pound; young, green alfalfa, .75 of a pound.

This forms a ration containing one pound of protein, 3.75 pounds of carbohydrates, and .35 of a pound of fat, and having a nutritive ration of 1:4.6; that is, 1 pound of flesh-forming food to an equivalent of 4.6 pounds of heat and fat-forming food.

This daily ration would be sufficient for 100 lbs. live weight; that is to say, it would feed twenty, five pound hens, or thirty-three, three pound hens.

At the Utah Agricultural Experiment Station the average of three years' experiments showed that Leghorn pullets consumed in a year 63.6 cents worth of food per fowl, and laid 167 eggs, which cost 4.6 cents per dozen and which brought $1.84. The profit from each hen was $1.20, or 188 per cent. on food consumed.—J. J. V.

CALIFORNIA POULTRY STATION.

The station is established in its own quarters on five acres of land in the suburbs of Petaluma; with an equipment of incubators, brooders, corrals and a cottage for the foreman.

There is at the present time going on at the station an experiment in feeding four lines of chicks, three of which are being fed different rations and the fourth being used as a control.

The objects of these tests is to find out which is the most profitable to feed as the main part of the ration.

Incubators are being started this week with the intention of running them throughout the year, in order that a special study may be made of the problems of incubation. We plan to fill an incubator with an accurate apparatus for automatically recording the temperatures, with a view to determining the possible relation between high temperatures during incubation, and mortality of chicks during the first few weeks of their life. This work is carried on by a foreman who resides on the station tract of land.

At Berkeley a large number of condimental, or proprietary foods are at present being examined, and upon completion of the analytical work the results will be published in bulletin form for general distribution.

Metabolism experiments will soon be carried on with the different nitrogenous foods ordinarily used bv poultrymen, in order to ascertain their digestion coefficient, and consequently their comparative physiological value as poultry feeds.

It is always best to have the hen yard large enough so that the grass will never be eaten down close, and by no means should the hens be compelled to run in yards all summer that are bare like the middle of the highway. If the yards are too small to allow any green stuff to grow, then sow some lettuce for them. It may be easily and quickly grown and is an excellent feed for both old and young poultry.

Poultry houses can be built in many ways, can be made cheaply or at great cost, just as you like, but we urge important points never be lost sight of; they should be on high ground so as to have dry floors, and they should admit the sun's rays during a considerable part of the day.

Coal ashes constitute a splendid grit for hens. Have you never seen a hen gobble down a half dozen chunks of cinders as large as the end of your little finger, as though they were choice bits of meat? Fowls will do this if they are in want of grit to operate on their digestive apparatuses.

KILLED BY THE FUMES.
You must kill the lice on the fowls some way. If you don't care to handle them singly, use our liquid
PRUSSIAN LICE KILLER.
Simply paint the roosts and drop boards with it. The fumes arise and kill the lice on fowl and pen. It catches them all to the last mite, and it takes the nit as soon as it comes to life. The fumes do the work. It is the perfect, easy method of protection and cure. But if you like the powder treatment better, don't forget the old reliable **Prussian Lice Powder.**
Enclosed please find 40 cents for another can of lice powder. We were well pleased with the first can, but we need and must have more.—H. F. Lake, Yankton, S. D.
Prices: Lice Killer, 50c and $1.00; 5 gallon can, $4.00. Lice Powder, 25c; by mail 40c. Remember also our famous **Prussian Poultry Food.** Get either of these from your dealer. If you don't find them write us at once. We will supply you and send you also our 68-page book.
Prussian Remedy Co., St. Paul, Minn. Special Agents: Chas. H. Lilly Co., Seattle, Portland, San Francisco; Chas. Winsel, Los Angeles; J. S. Pollock, Pittsburg; Eitmiller Bros., Baltimore; Vaughan Seed Store, Chicago; J. W. Wilder & Co, Cincinnati, Ohio.

S. C. WH. LEGHORNS and I. R. DUCKS Eggs, $1.50 per setting, $6.00 per 100. Send for illustrated catalogue
John P. Boden, 638 Second St., Watsonville, Cal.

Blue Andalusians
At Los Angeles, 1906, our strain in a class of 68 Andalusians with 16 birds won more firsts than all our competitors combined. Eggs, $1.50 and $2.00 per 14.
Blue Ridge Poultry Yards, 128 Avenue 32 Los Angeles

SHADE'S **Rhode Island . . . Red Farm**
Automatic Chicken Feeders.
Shade's Egg Food sold to consumers only.
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RED HEN RANCH
Egg for sale from Prize Winning **Rhode Island Reds.** Send for circular. **W. Frank Greenleaf, Santa Ana, or 404 H. W. Hellman Building, Los Angeles, Cal.**

Brown and White Leghorns
Prize winners at L. A. Show, '06. Eggs from good laying strains. Eggs, special matings, per 15 $2.00. Incubator lots, $6.00 per 100.
Hemet Poultry Yards, Hemet, Cal.

White Wyandottes and S. C. White Leghorns
Good layers. Trap nests used. Eggs: Wyandottes $1.50 to 2.50 per 15. Leghorns $1.50 per 15.
J. F. GOETTING, EL CASCO, CAL.

BRONZE TURKEYS
Hart's strain. Winners of five firsts at Los Angeles Show, '06, and always winners wherever exhibited. Write for prices.
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White and Buff Wyandottes
Prize-Winning, Egg-Laying, Wealth-Producing Strain.
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Mountain View Poultry Ranch
S. C. White Leghorns—Heavy layers. Eggs, $1.50 per 15, $5.00 per 100.
Indian Runner Ducks—Males for sale. Eggs, $1.00 per 13, $3.00 per 50, $5.00 per 100.
Mrs. J. L. Updyke - Fullerton, Cal.
Successor to Jacob Kreger

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SINGLE COMB WHITE LEGHORNS
I guarantee 100% fertile. Write for prices.
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A rightly balanced ration for inducing early moult and more eggs. All pure food, no filler, hence cheapest. Manufactured by
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Chamberlain's Perfect Chick Feed

"Nothing Just as Good"

World's Chick Feed of To-Day. The only original **Dry Chick Feed.** All others are worthless imitations. **Chamberlain's Perfect Chick Feed** was used exclusively at the great St. Louis World's Fair during the 7 months. This the highest compliment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.
CHAMBERLAIN'S PERFECT MASH EGG FEED,
THE WORLD'S GREATEST EGG PRODUCER.

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GERMAIN SEED CO.,
Pacific Coast Agents. LOS ANGELES, CALA,
SPECIAL PRICES ON TON LOTS.
Distributing Agents: FREDERICK BROWN, San Jose; CHAS. H. NEARPASS, San Diego; CHANNEL COMMERCIAL CO., Santa Barbara and Ventura.

General Agriculture

PREVENTION OF SMUT.

An examination of a large number of samples of California-grown wheat shows a deplorable lack of attention to the prevention of smut. Farmers doubtless do not realize the large loss which occurs from this trouble. In a number of cases the samples have shown as high as 10 per cent of smutted grains—an amount sufficient to seriously affect the profit from the crop. This is more to be deplored since the methods which can be employed are both easy of application and extremely effective.

There are three methods which can be recommended as well nigh positive in result, when the seed has been properly treated. These methods are set forth below in the order in which they are recommended.

* * *

Formaldehyd Method.—Use one pound of formaldehyd (40 per cent strength, known as formalin) to 50 gallons of water. The solution may be placed in barrels or tanks until used. The wheat may be dipped into the solution in loosely woven bags or wire baskets, allowed to remain for ten minutes, and then drained to save all the liquid possible, and dried when it is ready to sow.

If it is preferred, the seed may be spread on a clean canvas or board floor and the formaldyhyd solution applied with a sprinkler, or hose and nozzle, constantly stirring and mixing the grain with a rake or shovel until all the kernels are thoroughly wetted, when it is allowed to dry.

Be sure to get 40 per cent formalin. Dealers sometimes give a 25 or 30 per cent formalin for a 40 per cent.

The formalin should be weighed in order to make sure that a full pound to each 50 gallons of water be used. The cans in which the formalin comes often contains only three-fourths of a pound, hence the necessity of this precaution.

This treatment has an advantage over some others, in that it is not poisonous to persons handling the material.

* * *

Bluestone Method.—This is the method practiced almost exclusively in California. Its lack of effectiveness in many cases may generally be traced to a lack of thoroughness in the work. The details of the treatment are the same as in the formalin method.

A solution is made by dissolving 1 pound of blue vitriol in 4 gallons of cold water, and dipping the wheat in the solution, as above, until the grain has become thoroughly wet, after which it is immediately dried. Or the wheat may be piled upon a floor or canvas, and thoroughly sprinkled or sprayed with the solution while the grain is being constantly shoveled over, so that every grain becomes wet over the entire surface. Care should be taken that the solution is of uniform density by thoroughly agitating just previous to use.

* * *

Hot Water Method.—Utensils Required.—1st, a boiler or large kettle in which to boil water; 2d, a vessel for cold water; 3rd, a vessel for water at 120°-132° F.; 4th, a vessel, barrel, or tank containing water kept constantly between 132° and 135° F.; 5th, a drying place where the grain is dried so it will pass through the drill or seeder; and 6th, an accurate thermometer to keep the temperature of the water within the above limits.

* * *

How to Proceed.—The vessels having been arranged and filled with water at the proper temperature, some convenient bulk of well-cleaned seed-wheat is taken in a loosely-woven bag and immersed in the first vessel containing water at 120°-132° F., keeping the wheat in constant agitation by moving the bag in the water, or by stirring the wheat. In about five minutes, when the seed will be well warmed and thoroughly wet, it is raised out and most of the water allowed to drain out, then immersed in the second vessel containing water at 132°-135° F., moving or stirring as before, and keeping close watch that the temperature does not fall below 132°. After twelve minutes it may be taken out and spread out to dry at some place where it will not be contaminated with fresh spores. When it is dry it may be sown. Some advise dipping in cold water at last, but that retards the drying, and should be omitted.

* * *

Cautions.—1. Keep the water in the first vessel well up to 132° in temperature, as the cold wheat will lower it rapidly.

2. Keep the temperature within the limits stated for the second vessel (which should be a large one), or the method will not give the desired results.

3. Be sure the thermometer registers correctly.

4. The seed-wheat will swell somewhat, and one-third to one-half more bulk of seed must be sown to remedy this result

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GERMAN AMERICAN
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223 SOUTH SPRING STREET.

BRANCH: MAIN AND FIRST STS

GRAFTING AND BUDDING GRAPES

Continued from first page.

scion-bud. On a smooth part of the stock above ground a T-shaped incision is made through the bark, and the sides are raised with the haft of the grafting knife.

The scion is taken from a cane of the previous year's growth before the eyes start to burst in the spring, and preserved in sand until the time of grafting. The bud should be well constituted and healthy, but need not be at a particular state of development, as in the Salgues graft. The scion-bud is cut out as is done for fruit trees, but under the eye a thickness of wood is left reaching to the pith; and even a little of the latter may be left. This will give a scion about one inch long, with the inside section nearly flat. The bud is inserted and tied in the usual way. To insure knitting the shoots of the stock must be pinched short; the tie is cut one month after.

This graft may be made during the whole period during which the sap is circulating, and when the bark is detachable from the wood. The Vouzou graft has been very successful; 75 to 80 per cent of "takes" have commonly been obtained, and in one instance the success of 95 per cent was publicly demostrated. It is a simple graft and gives a perfect union. In case of failure it is easy to repeat it the same season.

The Kings and San Joaquin rivers have flooded over 20,000 acres of valuable grain and are still rising though now higher than for over twenty years.

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Twenty Foot Cut, Very Best Condition.
We also carry a full line of Harvester, Thresher and Hay Press extras.
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NORMAL AND PREPARATORY
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ADVANTAGES
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2. Tuition reasonable.
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Queries and Replies

ROBUSTA PALMS.

Editor Cultivator: I recently ordered from one of the leading firms of nurserymen in the State a number of W. Robusta palms for which they charge 50 cents a piece more than for W. Filifera of same size, 2-3 feet. In their list they distinctly state for W. Robusta "no filaments." The leaves of the young palms were just covered with long white threads. Yet on inquiry they persist that they are Robusta. Their statements cannot both be true. How can one tell a young Robusta palm so as not to be swindled. My own previous opinion was that the Robustas were nearly without threads.—P. C., Ceres.

Washingtonia robusta is very variable in appearance, especially in the amount of filaments hanging from the leaves. We know of one, in Dr. Bailey",s yard in Santa Ana that is of the extreme type of robusta, yet the leaves are the "hairiest"' of any Washingtonia in the State. The trunk and leaf stems of the robusta are darker than those of filifera and the green of the leaves is also darker, the leaf stems shorter, and altogether it is a neater and a cleaner palm. If you purchased them from a "leading firm" we believe you got what you paid for. With age the robusta loses its filaments.

HOSE PAINT.

Editor Cultivator: Will you please give me a formula for coating canvas irrigating hose; something that will be water-proof and not injurious to the hose. I have an alfalfa ranch that I irrigate in this way, and without a water-proof hose I lose so much water. Please let me know through the next issue of your paper and oblige—W. W.. Colton.

Mr. J. B. Neff states that he has made a very satisfactory paint for such purposes with boiled linseed oil and Prince's metallic, using it very thin, and in most cases applying two coats some little time apart.

STERILE BERRIES.

Editor Cultivator: I have 60 plants of Loganberries which in the 3 years of their life have never borne a berry, though blooming profusely. I can see nothing wrong with the blossoms; they seem perfect.—J. L. S., Los Angeles.

Loganberry vines are very subject to anthracnose and when they become affected with this they will bloom and produce very little or no fruit. In all likelihood your vines have this disease.

EASTER GRAPES.

Editor Cultivator: We hear much of some eastern grapes, but can you tell me if the following will do well in Southern California in general and in the Rialto—Cucamonga district in particular: Champion, Moore's Early, Pocklington. Salem, Vergennes, Worden.—E. B., Los Angeles.

We cannot recommend any of the above from experiments carried on at the Pomona Station. Out of twenty odd varieties, Niagara and Agawam were considered good.

WALNUT TROUBLE.

Editor Cultivator: Enclosed please find a walnut leaf with some kind of parasite. Will you kindly tell me what it is and give a remedy? Some of the nuts have black spots on them and the leaves look wilted and some of them are falling off. Is this the blight?—D. A.

We received the walnut leaf but could find no parasite, they evidently having escaped. The leaf is so dry and discolored that we cannot tell anything about it. Send one direct to J. W. Mills, Pomona.

The blight causes black spots on young walnuts and this makes the walnuts drop when they are small.

FOX TAIL.

Editor Cultivator: What is the best method of getting rid of fox-tail grass about the premises?—W. S. R., Corona.

The best method known to science is to get after it with a sharp hoe when small.

FROGS.

Editor Cultivator: Would a frog farm be profitable in the locality of Gardena, and where can information relative to starting this industry be had?—Mrs. G., Gardena.

Frog farms have been profitable and some have been failures. There are a good many things to contend with and returns do not come in for a considerable length of time after starting. Night birds are very destructive to frogs and a great many other things will interfere with the enterprise. Our advice would be to start a frog pond on a small scale and grow into the business. You will thus increase your stock with your experience.

You can get a stock of frogs from the edges of any reservoir in Southern California which has sloping sides.

ORANGES AND ROSES.

Editor Cultivator: I wish for some information in regard to roses and oranges and through the advice of a friend address you hoping that some of the writers or contributors to the "Cultivator" may help me.

I have a young orange tree also lemon that are badly infested with what I take to be black and red scale. I was advised to use kerosene emulsion but it seems to have no effect, can you tell me what to do?

I also have some roses that seem to be mildewed, the leaves and some of the young shoots being white and frosty looking. I have tried sulphur but with no results. Can you tell me the cause and remedy for this disease, as I suppose it is?

I also have other roses which have a yellow, rust-like, appearance on the under side of the leaves which after a time drops off leaving the bush bare and dead looking. The bushes are near no other plants and have been irrigated only once this season. so I do not think it can be too much water. The soil is quite heavy though well cultivated.

I should like very much to learn the causes of these diseases or whatever they may be and the cure for them if there is any. The neighbors and those I have asked do not know, though some of them are troubled the same way. This, I expect is encroaching on your time, but thought you would know of some authority on plants whom you might consult and if you would give this communication to such a one whom you may have on your staff I should be very much obliged.—P. T., Prospect Park.

Our advice would be to fumigate your orange and lemon tres with cyanide gas. You will have to fumigate more than once as the two scales have different characteristics and you must fumigate when the majority of the eggs are just hatched or between that time and the time when the scales are farther down.

You rose trouble must be controlled by fungicides. When the leaves are all off the bushes as you describe, drench them and the ground beneath with a solution of one pound of bluestone to ten gallons of water. Follow this with Bordeaux mixture when the young leaves begin to appear. During the following year spray with Bordeaux mixture about once in two months. After this, spray with the mixture twice a year. This treatment should clean up your bushes and keep them in good order; as a second safeguard against the powdery fungus, sprinkle sulphur under the bushes. This will be of no value, however, unless the temperature is 80 degrees or more.

JOHNSON GRASS.

Editor Cultivator: I am mailing to you, in separate package, a sample of grass that I have found growing in a new alfalfa field. Kindly identify and let me know in your paper whether it is objectionable or not, and oblige subscriber.—W. J. S.

The specimen sent is an awnless head of Johnson Grass (Sorghum Halespense). As to its value, that depends on the territory. We believe it should be considered a pest in all parts of California and vigorous measures taken to stamp it out. This is sometimes a hard task, especially in damp soils.

ONION SEED WANTED.

If L. N. G. had sent his name we might have published it and his address, together with the question as to where he could get some "of the big red sweet onion I saw growing in Sonoma county." Perhaps some of our advertisers may send in an answer that they have it for sale. 'L. N. G." (and others,) are hereby notified that we seldom depart from the rule of consigning all communications to the waste basket that are not signed in full by writer.

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Household Department

LOVE OF COUNTRY.

Breathes there a man with soul so dead
Who never to himself hath said,
This is my own, my native land!
Whose heart has ne'er within him burned
As home his footsteps he hath turned,
From wandering on a foreign strand?
If such there breathe, go mark him well;
For him no minstrel raptures swell!

High though his titles, proud his name,
Boundless his wealth as wish can claim:
Despite those titles, power and pelf,
The wretch, concentered all in self,
Living, shall forfeit fair renown,
And doubly dying, shall go down
To the vile dust, from whence he sprung,
Unwept, unhonored, and unsung.

Sir Walter Scott.

CENTENNIAL ORATION.

(1876)

The conditions of life are always changing, and the experience of the fathers is rarely the experience of the sons. The temptations which are trying us are not the temptations which beset their footsteps, nor the dangers which threaten our pathway the dangers which surrounded them. These men were few in number; we are many. They were poor, but we are rich. They were weak, but we are strong. What is it, countrymen, that we need today? Wealth? Behold it in your hands. Power? God hath given it to you. Liberty? It is your birthright. Peace? It dwells amongst you. You have a government founded in the hearts of men, built by the people for the common good. You are a land flowing with milk and honey; your homes are happy, your workshops busy, your barns are full. The school, the railway, the printing press, have welded you together into one. Descend those mines that honeycomb the hills! Behold that commerce whitening every sea? Stand by yon gates and see that multitude pour through them from the corners of the earth, grafting the qualities of older stocks upon one stem; mingling the blood of many races in a common stream, and swelling the rich volume of our English speech with varied music from an hundred tongues. You have a long and glorious history, a past glittering with heroic deeds, an ancestry full of lofty and imperishable examples. You have passed through danger, endured privation, been acquainted with sorrow, been tried by suffering. You have journeyed in safety through the wilderness and crossed in triumph the Red Sea of civil strife, and the foot of him who led you hath not faltered, nor the light of his countenance been turned away.

It is a question for us now, not of the founding of a new government, but of the preservation of one already old; not of the formation of an independent power, but of the purification of a nation's life; not of the conquest of a foreign foe, but of the subjection of ourselves. The capacity of man to rule himself is to be proven in the days to come, not by the greatness of his wealth; not by his valor in the field; not by the extent of his dominion, nor by the splendor of his genius. The dangers of today come from within. The worship of self, the love of power, the lust for gold, the weakening of faith, the decay of public virtue, the lack of private worth—these are the perils which threaten our future; these are the enemies we have to fear; these are traitors which infest the camp; and the danger was far less when Cataline knocked with his army at the gates of Rome, than when he sat smiling in the Senate House. We see them daily face to face; in the walk of virtue; in the road to wealth; in the path to honor; on the way to happiness. There is no peace between them and our safety. Nor can we avoid them and turn back. It is not enough to rest upon the past. No man or nation can stand still. We must mount upward or go down. We grow worse or better. It is the eternal law—we cannot change it.

The century that is opening is all our own. The years that lie before us are a virgin page. We can inscribe them as we will. The future of our country rests upon us, the happiness of posterity depends upon us. The fate of humanity may be in our hands. That pleading voice, choked with the sobs of ages, which has so often spoken to deaf ears, is lifted up to us. It asks us to be brave, benevolent, consistent, true to the teachings of our history, proving "divine descent by worth divine." It asks us to be virtuous—building up public virtue by private worth; seeking that righteousness which exalteth nations. It asks us to be patriotic—loving our country before all other things; her happiness our happiness, her honor ours, her fame our own. It asks us in the name of justice, in the name of charity, in the name of freedom, in the name of God.

My countrymen, this anniversary has gone by forever, and my task is done. While I have spoken, the hour has passed from us; the hand has moved upon the dial and the old century is dead. The American Union endured an hundred years! Here, on this threshold of the future, the voice of humanity shall not plead to us in vain. There shall be darkness in the days to come; danger for our courage; temptation for our virtue; doubt for our faith: suffering for our fortitude. A thousand shall fall before us, and tens of thousands at our right hand. The years shall pass beneath our feet, and century follow century in quick succession. The generations of men shall come and go; the greatness of yesterday shall be forgotten today; and the glories of this noon shall vanish before tomorrow's sun; but America shall not perish, but endure while the spirit of our fathers animates their sons.—Henry Armitt Brown.

LIBERTY AND UNION.

I profess, sir, in my career hitherto, to have kept steadily in view the prosperity and honor of the whole country, and the preservation of our Federal Union. It is to that Union we owe our safety at home, and our consideration and dignity abroad. It is to that Union that we are chiefly indebted for whatever makes us most proud of our country. That Union we reached only by the discipline of our virtues in the severe school of adversity. It had its origin in the necessities of disordered finance, prostrate commerce and ruined credit. Under its benign influences these great interests immediately awoke, as from the dead, and sprang forth with newness of life. Every year of its duration has teemed with fresh proofs of its utility and its blessings; and although our territory has stretched out wider and wider, and our population spread out farther and farther, they have not outrun its protection or its benefits. It has been to us all a copious fountain of national, social, and personal happiness.

I have not allowed myself, sir, to look beyond the Union, to see what might lie hidden in the dark recess behind. I have not coolly weighed the chances of preserving liberty, when the bonds that unite us together shall be broken asunder. I have not accustomed myself to hang over the precipice of disunion, to see whether, with my short sight, I can fathom the depth of the abyss below; nor could I regard him as a safe counsellor in the affairs of this government, whose thoughts should be mainly bent on considering, not how the union should be preserved, but how tolerable might be the condition of the people, when it shall be broken up and destroyed. While the Union lasts, we have high, exciting gratifying prospects spread out before us, for us and our children. Beyond that, I seek not to penetrate the veil. God grant that in my day, at least, that curtain may not rise. God grant that on my vision never may be opened what lies behind. When my eyes shall be turned to behold for the last time the sun in heaven, may I not see him shining on the broken and dishonored fragments of a once glorious Union; on State dissevered, discordant, belligerent; on a land rent with civil feuds, or drenched, it may be, in fraternal blood! Let their last feeble and lingering glance, rather, behold the gorgeous ensign of the Republic, now known and honored throughout the earth, still full high advanced, its arms and trophies streaming in their original lustre; not a stripe erased or polluted, not a single star obscured—bearing for its motto, no such miserable interrogatory, as What is all this worth? nor those other words of delusion and folly: Liberty first, and union afterwards; but everywhere, spread all over in characters of living light, blazing on all its ample folds, as they float over the sea and over the land, and in every wind under the whole heavens, that other sentiment, dear to every true American heart: Liberty and union, now and forever, one and inseparable! —Daniel Webster.

A shiny or greasy skin can be benefited by dabbing with a sponge dipped in eau de cologne instead of using much soap and water. Being such a skin astringent, it is excellent for preventing acne.

MEANING OF OUR FLAG.

The flag for which the heroes fought, for which they died, is the symbol of all we are, of all we hope to be. It is the emblem of equal rights. It means free hands, free lips, self government, and the sovereignty of the individual. It means universal education—light for every mind, knowledge for every child. It means that the school-house is the fortress of liberty. It means that "governments derive their just powers from the consent of the governed;" that each man is accountable to and for the Government; that responsibility goes hand in hand with liberty. It means that it is the duty of every citizen to bear his share of the public burden—to take part in the affairs of his town, his county, his State, and his country. It means that the ballot-box is the ark of the covenant; that the source of authority must not be poisoned. It means the perpetual right of peaceful revolution. It means that every citizen of the Republic, native or naturalized, must be protected at home in every State, abroad in every land, on every sea. It means that all distinctions based on birth or blood have perished from our laws,

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that our government shall stand between labor and capital, between the weak and strong, between the individual and the corporation, between want and wealth, and give and guarantee simple justice to each and all. It means that there shall be a legal remedy for every wrong. It means national hospitality—that we must welcome to our shores the exiles of the world, and that we may not drive them back. Some may be deformed by labor, dwarfed by hunger, broken in spirit, victims of tyranny and caste—in whose sad faces may be read the touching record of a weary life—and yet their children, born of liberty, and love, will be symmetrical and fair, intelligent and free.

That flag is the emblem of a supreme will—of a nation's power. Beneaths its folds the weakest must be protected and the strongest must obey. It shields and canopies alike the loftiest mansion and the rudest hut. That flag was given to the air in the Revolution's darkest days. It represents the sufferings of the past, the glories yet to be, and like the bow of heaven, it is the child of storm and sun.—Ingersoll.

THE LOVE OF COUNTRY.

Whence does this love for our country, this universal passion proceed? Why does the eye ever dwell with fondness upon the scenes of our youth? Why are not other soils as grateful and heavens as gay? Why does the soul of man ever cling to that earth where it first knew pleasure and pain, and, under the rough discipline of the passions, was roused to the dignity of moral life? Is it only that our country contains our kindred and our friends? And is it nothing but a name for our social affections? It cannot be this; the most friendless of human beings has a country which he admires and extols and which he would, in the same circumstances, prefer to all others under heaven. Tempt him with the fairest face of nature, place him by living waters under shadowy trees of Lebanon, open to his view all the gorgeous allurements of the climates of the sun, he will love the rocks and deserts of his childhood better than all these, and thou canst not bribe his soul to forget the land of his nativity; he will sit down and weep by the waters of Babylon, when he remembers thee, O Sion!—Sydney Smith.

HISTORICAL DATA.

The California Historical Department of the State Library is endeavoring to make a collection of all material issued by the various parties during the last political campaigns, such as ballots, broadsides, circulars, in fact material of all kinds printed during the campaigns that have occurred. Everything of this nature is of value to the historical department and if placed in their care will be preserved and made accessible to those who wish to study the political history of the State and the methods employed by the different parties to advance their interests. They hope that persons will donate to the State Library everything they may have that will assist in building up this collection, and if possible refer them to other sources where material may be found. The following circular has been sent out:

"Do not destroy books, pamphlets, newspaper files, manuscript narratives, dairies, public correspondence, or original documents of any kind which may throw light on the early history of California. The California Historical Department of the State Library can utilize them.

"Ephemeral publications such as broadsides, leafless tracts, circulars, programs, political dodgers, etc., present a faithful day-by-day picture of great interest and value. Old account books of early storekeepers, letters of pioneers, and diaries of original settlers should all be collected and kept. Anyone having such records will confer a great benefit upon future writers and students of California history by sending them to the California Historical Department of the State Library, Sacramento, to James L. Giles, State Librarian, where they will be carefully preserved and made accessible to the public.

HOW TO CLEAN JEWELRY.

Diamonds may be cleaned by brushing them with a lather of soap and water, rubbing them afterward with eau de Cologne. If well shaken in a bag of bran they acquire great brilliancy. Cut stones should not be wiped after being washed. Wash in a lather of white soap, rinse until quite dry. Opals which have become dim may be polished by rubbing them well with oxide of tin or with damp putty spread on chamois leather. Finish with damp powdered chalk, also spread on leather. Then wash the opals with a soft brush in water and then immerse in the following: Salt, one pint; alum, one pint; saltpetre, two pints; water four pints. Leave the opals in this for five minutes, then rinse in cold water and polish with a leather. They should be kept in silver paper. Oxidized silver can be cleaned in a quarter of a pint of sulphuric acid, mixed with one pint of water. Ordinary silver articles may be kept bright by cleaning them with a slice of lemon and afterward rinsing in cold water. Then wash in a lather of soap and rinse in hot water, dry with a soft cloth and polish with leather. Nickel should be rubbed with a flannel dipped in ammonia. Amber may be rubbed with wet powdered chalk, then with a little olive oil applied with a flannel. Ivory can be whitened with a solution of peroxide of hydrogen, or let the articles stand in spirits of wine in the sunshine.

SELECTION OF GLADIOLUS.

If you have gladiolus about the home and have no time to fool with them by emasculating and pollenizing to get more and better flowers, pursue one of two methods to get good seeds.

You may cut down and use in the house all you think are not first class, thereby removing them from a chance of their fertilizing the better ones. This you can do in the morning after the first flower opens. They all open at night and the pollen is not freed for some hours after.

If you wish to leave them pull the anthers out of the poor ones and insects will carry the pollen about among the good ones. The anthers are usually three in number and are from a half to three-fourths of an inch long, on the ends of wire-like filaments. Just take hold of these three and they easily break away. Leave the pistil, which is a three-forked organ. . Bees or other insects will carry the pollen from the anthers of the good ones and by sowing the resultant seeds about March you will have a new set of gladiolus of superior merit.

TO KEEP YOUR HANDS SOFT.

Equal parts of glycerine and strained lemon juice will make your hands beautifully white and soft if a little is rubbed in two or three times a day after washing. Leave it on ten minutes or a quarter of an hour, then wash your hands quickly in lukewarm water, using a good soap, and thoroughly dry. If your hands are inclined to be moist, rub in a very little lemon juice after drying.

Sterculia diversifolia makes an excellent street tree of medium size, but should be planted in good soil. If the trunks are injured by a horse they seldom recover, and often die.

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August 7th 8th and 9th, Milwaukee, Wis., $74 50, on account of Eagles convention.
August 7th, 8th and 9th, Minneapolis, Minn., $70.00, on account of G. A. R.

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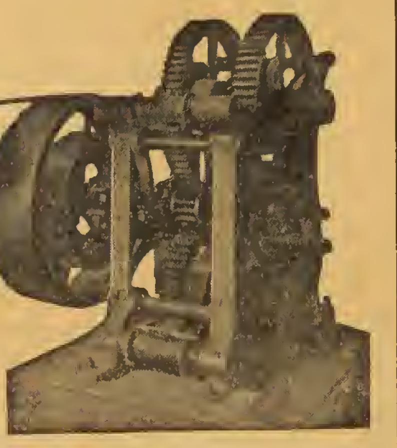
The Pomona Pump



□ The New Pomona Pump is now being manufactured with machine cut gears and machine cut steel or bronze pinions. The pump fitted with this kind of gearing runs as smooth as a clock and there is absolutely no noise or vibration. The company have recently taken contracts for installing their largest sized pump with this class of gearing for the Artesian Belt Water Company of San Dimas. Western Water & Power Company of Glendora and other large irrigation companies. They are required to furnish these pumps with cylinders up to 12 inches in diameter and 72 stroke which has capacity of over 60 Miner's inches of water. The valves are made entirely of phosphor bronze with ground metal taper seats so there is very little obstructiin to the water in passing through them and it is impossible to clog them with sand. These, in connection with machine cut gears, in the pump head, make a strictly high grade pumping outfit and the best by a long ways of anything on the market today.

This head and valves are both protected by United States patent. Beware of infringing as both manfacturer and user are liable.

The company has recently installed one of their latest improved heads for the Santa Anita Land Company, a subdivison of the Baldwin Ranch. Below is what the owners have to say about it:

"The new 38 pump you installed for us on our tract on the E. J. (Lucky) Baldwin Ranch is giving us satisfaction in every way. We think we have the very best that money will buy. Both as regards to pump, material used and installation. We made an excellent change when we removed the pump we had been using and installed your make."

We have pleased these people and there is no reason why we cannot please you.

Send for catalog to

The Pomona Manufacturing Co.
Pomona California

OPIUM and Whiskey Habits cured at home without pain. Book of particulars sent FREE. B. M. Woolley, M.D., Atlanta, Ga., 103 N. Pryor St.

When writing advertisers mention Cultivator.

The Produce Markets

Los Angeles Markets.

Los Angeles, June, 27, 1906.—The local fruit market is very unsettled. While the season for drying fruits should be at its height, the cloudy weather has caused much of the fruit to sour. Several weeks of hot, dry weather would have a tendency to clean out the overstocked fruit market. The San Francisco market is unable to take care of the large supplies that are shipped to that city, and the surplus stocks are sent to this market, thus causing fruits of all kinds to be overabundant.

Butter.

Local Creamery, per roll	50
Valley Creamery, fancy	45@50
Coast, Fancy	42½@45
Coast, Choice	37½@40
Fancy Eastern Cubes	24
Cooking	18

Cheese.

Cal. 3-℔. hand	18
Cal. Young America	17
California Anchor, Large	16
Northern	13-14
Domestic Swiss	20
Imported do	28

Eggs and Poultry.

Eggs, fresh ranch	23
Northern candled	19

There is more difference between prices to producers of poultry and to the retailers of poultry than in most other lines. The following are average prices which dealers pay to producers for live weight:

Hens, per ℔	12
Young roosters, per ℔	15
Fryers	15
Broilers, per ℔	15
Old Roosters	8
Turkeys	17-19
Geese	10
Ducks	10

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock:

Hogs, 200 ℔	5
Prime Steers	3¼
Cows	2¾
Calves, per ℔	4
Sheep, ewes, per head	4.00
Lambs, per head	3.00
Wethers	4:50

Potatoes.

Burbank, fancy new	1.60@1.75
Oregon	1.35-1.50
Highland	1.25-1.35
Sweets, (white)	$4.00

Vegetables.

Silver Skins	2.00
Bermuda	2.00
Garlic	8@10
Wax Beans	4@5
Rhubarb, per box	1.25
Parsnips, per doz	25@30
Cabbage, per doz	85
Asparagus	7@11
Lettuce, per crate	1.25
Bell Peppers	15@18
Chili Peppers, Green	18
Chili, dried	20
Egg Plant, per ℔	20@25
Cucumbers, per doz	25@50
Radishes, per doz	15
String Beans	2@3
Green Corn, local, per doz	25
Beets	25@30
Green Onions, doz. bunches	15@20
Carrots, per ℔	4
Peas, per lb	2@3
Turnips, doz bunches	25@30
Celery, per doz	45@60
Tomatoes, 4 basket crate	1.75
Summer Squash	15@25

Citrus Fruits

Lemons, Standard	3.75
Lemons, Choice	3.85@3.90
Lemons, Fancy	4.25
Valencias	3.50
Sweets	300@3.25
Navels, Choice	$3.00
Navels, Fancy	3.25@3.50
Grapefruit	$3.50@4.00
Grapefruit, seeds	$2.50

Fresh Fruits.

Apples are very scarce and of indifferent quality.

Missouri Pippins	2.75@3.00
N. Y. Pippins	$2.50
Apricots, per lug box	65@85
Strawberries	3@4
Dewberries	3@4
Cherries, White, Royal Anne	7@8
Logan Berries	4
Blackberries	2½@3

Dried Fruits

Evaporated apples, ch to fy	15
Apricots	14
Peaches	12½
Pears	13
Plums	11
Santa Clara Prunes	4@8½
Smyrna Figs	15@17

Beans, Dried.

Limas, No. 1	5.00
Pinks, fancy	2.20@2.30
Lady Washington	3.10@3.25
Small White	3.00@3.75
Black Eyes	6.50

Honey.

The honey prices here quoted are those of the Los Angeles Board of Trade, the most responsible authority we have. They are jobbers prices, that is, prices at which the jobber sells to grocers and others in small lots. The producer can take from this his freight to Los Angeles and one cent per pound for commission and will have left the net price to him.

Honey, extracted, water white, 60-℔ cans	6
Honey, extracted, white	5½
Light amber	5
Comb, water white, 1-℔ frames	14-15
White	13
Light amber	12@12½
Beeswax	25

Nuts.

Peanuts, Virginia	6½
Peanuts, California	5
Walnuts	13½

Hay.

Barley, No. 1	$12.00@14.00
Barley, No. 2	$10@12.50
Alfalfa, local	11.00@13.00
Plain Oat Hay, No. 1	13.00@15.00
Plain Oat Hay, No. 2	8.00@13.00

Grain.

Purchasing prices f. o. b., Los Angeles, are:

Wheat	1.25@1 37½
Barley	1.20@1.22½
Corn	1.22 @1.24
Rolled Barley	1.40
Bran	1.20
Feed Corn Meal	1.45
Shorts	1.45
Wheat, per cwt	1.50@1.65
Cracked Corn	1.45
Oil Cake Meal	2.50
Cocoanut Meal	1.50

San Francisco Markets.

San Francisco, June 26, 1906.

Dairy Produce.

New California cheese was advanced in price yesterday and held firmly. Eggs were in good supply and steady, and butter was unchanged.

The ruling prices of the San Francisco Wholesale Dairy Produce Exchange yesterday were as follows:

Butter.

BUTTER—Fresh California, extra, 19c; firsts, 18½c; seconds, 17-17½c; packing stock, firsts, 16c; seconds, 14-14½c.

Cheese.

CHEESE—New California, fancy, 10c; firsts, 9-9½c; Young America, fancy, 11c; eastern, New York fancy, 16½-17c; Western, new, 15c.

Eggs.

EGGS—Fresh California selected, 21c; firsts, 29c; seconds, 19c.

Poultry.

POULTRY—Old roosters, per doz, $3.50-4.50; young roosters, $5-7; fryers, $3-4.50; broilers, $2.50-3.50; hens, small, $4-4.50; large, $5-6; live turkeys, per lb., nominal; dressed turkeys, per lb, nominal; ducks, old, nominal; young, nominal; geese, per pair, nominal; goslings, nominal; pigeons, per doz. $1; young, $1.25-1.50.

GAME—Hare, $1.25-1.50 per doz; rabbits, $1.50-2.

Fresh Fruits.

DECIDUOUS FRUITS—The leading varieties sold yesterday at the following prices:

Apples—Per box, $1-1.25; some small boxes at 75c.

Apricots—Per box, 75-$1.15; per crate, 90c-$1.25.

Peaches—Per box, 40-75c.

Cherries—Per drawer, black varieties, 75c-$1; Royal Anne, 50-75c; bulk stock, 5-8c per lb.

Plums—Per box, 40-60c; crates, 65-85c; cherry plums, per drawer, 30-40c.

Prunes—Per box, 40-60c; crates. 65-90c.

MELONS—Canteloupes, per crate, large, $3-4; small, $1-2.

BERRIES—Blackberries, per chest, $4-6.

Currants—Per chest, $5-7.

Loganberries—Per chest, $3.50-5.

Raspberries—Per chest, $4-6.

Strawberries—Per chest, Longworths, $5-8.50; large varieties, $3.50-$5.

Gooseberries—Nominal.

CITRUS FRUITS—Per box, oranges, $2.75-3.50 for navel and $2.50-3 for seedings, Valencias. $3-4; lemons. $3-5; grape fruit, $3-4; limes, nominal.

TROPICAL FRUITS—Bananas, $1-2 per bunch; pineapples, $1.50-3 per doz.

Dried Fruits.

Prices for carload lots, 1905 crop, free on board at California common shipping points, in bags, are per lb as follows:

Prunes—Choice, 4¼-4½c per lb, basis for the four sizes. For boxed fruit add ¼-½c per lb.

Apricots—Choice, 12-12½c; extra choice, 13-13½c; fancy, 14-14½c.

Peaches—Choice, 10-11c; extra choice, 11¼-11½c; fancy, 11¾-12c; extra fancy, 12-12½c.

RAISINS—1906 crop—Seeded, 4⅝-6c; loose Muscatels, 4c, 4½c and 5c for 2, 3, and 4 crown respectively; seedless, 3½c; seedless Sultanas, 4c; Thompson seedless, 5c for unbleached and 8-11c for bleached; imperial, clusters, 6-crown, $2.50; Dehesa, clusters, 5-crown, $2; fancy clusters, 4-crown, $1.50; London Layers, 3-crown, $1.10; London layers, 2-crown, $1.

Vegetables.

Dealers sold vegetables at the following prices:

POTATOES—New crop, 90c-$1.25 per ctl; old crop Oregon Burbanks, per ctl, 70c-$1; rivers, 65-90c.

ONIONS—New, per sack, 75-90c; Oregon, $2-2.50 per ctl; Australian, per ctl, $3-3.50.

VEGETABLES—Asparagus, $1.25-1.75 for small boxes and $2-2.50 per large; rhubarb, 80c-$1.25 per box; green peas, $1-1.25; per sack; green corn. per sk, $1.25-1.75; string beans, 1@2c per ℔; wax beans, 1@2c per ℔; tomatoes, $1.25-1.50 per box; cucumbers, 80-90c per box for Marysville and $1.50-1.75 for bay; summer squash 40-75c for small and $1-1.25 for large crates.

Hops.

Desirable grades of California crop of 1905 sell at 8-11c per ℔; 1906 crop, for future delivery, 9-11c, with occasional sales at 12½c.

Live Stock Market.

CATTLE—No. 1 steers, 6½-7c; second quality, 6-6½c; third quality, 5½-6c; No. 1 cows and heifers, 5½-6c; second quality, 5-5½c; third quality, 4-5c; thin cows and heifers, 3-4c; bulls and stags, 2-3c. Prices for all descriptions less 50 per cent for shrinkage.

CALVES—Light, per lb, 4¼-4¾c. gross weight; medium, 3½-4c; heavy, 3-3½c.

SHEEP—Per lb: Wethers, No. 1, 4½-5c, gross weight; ewes, No. 1, 4-4½c, gross weight.

LAMBS—Per ℔: Yearlings, 4½-5c.

HOGS—Per lb: Hard grain fed, weighing alive 80 to 130 lbs, 6c; 130 to 150 lbs, 6½c; 250 to 350 lbs, 6c; rough heavy, 4-5c; common 3½-4c.

Flour and Grain.

FLOUR—Net cash: Family extra, $4.70-5 per barrel; bakers' extra, $4.40-4.65 per barrel; Oregon and Washington, $3.50-4.

WHEAT—No. 1 shipping, per cental, $1.30-1.32½; inferior grades, $1.25-1.27½; white milling, good to choice, $1.32¼-1.37½; Northern Club. $1.32½-1.35; Northern Bluestem, $1.42½-1.45; Northern Red, $1.32¾1.35 per cental.

BARLEY—No. 1 feed, 98¾-$1.01¼; common to fair, 93¾-97½; brewing, nominal.

OATS—White, $1.50-1.75; red, $1.20-$1.50, according to quality; black, $1.25-1.37½.

RYE—$1.47½-1.55 per cental.

CORN—Small round yellow, $1.55-1.65; western, mixed, $1.35-1.37½; yellow, $1.32½-1.37½; white, $1.35-1.40 per cental.

Hay and Feedstuffs.

HAY—Per ton, choice wheat, $17-18; lower grades, $13-16; wheat and oat, $12-16.50; oat, $10-15; barley, nominal; alfalfa, $10-12; stock, $7-8.

STRAW—Per bale, 30-55c.

FEED—Mixed Feed, per ton, $23-24; Calfalfa Meal, $20; carload lots, $19.50; Mealfalfa, per ton, $20; carload lots, $19.50.

BRAN—Per ton, $20-21.

MIDDLINGS—Per ton, $26-29.

GROUND BARLEY—Per ton, $22.50-23.50.

FEED CORN MEAL—Choice grades, per ton, $30-31.

CRACKED CORS—Choice stock, per ton, $29-30.

OILCAKE MEAL—Mill rates in 5-ton lots, $37.50; jobbing, $38-38.50.

COCOANUT CAKE—In lots of 10 tons, $23; 5 tons, $23.50; less quantity, $24. Prices are mill rates and are subject to change without notice.

Beans and Seeds.

BEANS—Prices per ctl: Large white, $2.40-2.60; small do, $3.25-3.45; pea, nominal; lima, $4.40-4.60; red, $3-3.50; pink, $1.60-1.85; Bayo, $3.75-3.85; blackeyes, $5.50-5.65; red kidneys, $4-4.50; horse beans, nominal.

SEED.—Brown Mustard, $4.50-4.75; yellow mustard, $3.50-3.75; flaxseed, $2.50-3; canary, 6¼-6½c; alfalfa, 13c; rape, 2½-3c; timothy, 5c; hemp, 5½c per lb; millet. 3-3¼c.

DRIED PEAS.—Niles, $1.75-1.85; green peas, $2-2.25.

Hides and Wool.

HIDES AND SKINS.—For round lots prices are as follows:

Wet Salt Hides—No. 1 sound, per lb, heavy steers, over 50 lbs, 13c; medium steers, over 48 lbs, 12c; heavy cows, over 50 lbs, 12c; light hides, 12c; kips, 13c; veal. 13½c; calf, 14c; stags and bulls, 8½c; No. 2 hides, 1c per lb less.

Dry Hides—Per ℔: No. 1, 22c; No. 2, 20c; dry kip, No. 1, 20c; No. 2, 18c; dry calf, No. 1, 24c; No. 2, 22c.

Horse Hides—Salted, large. $3-$3.25 each; medium, $2.75 each; small, $2.25 each. Dry—Salted, $2-2.25 each; medium, $1.50-1.75 each.

Sheep Pelts—Long wool skins, $1.25-2 each; medium wool skins, 90c-$1.10 each; short wool skins, 50-75c each; shearings, 20-40c.

WOOL—Per lb: Fall clip, San Joaquin and Southern Plains, 9-11c; Southern Mountain. 9-11c; middle and southern counties, free, 12-14c; do, defective, 10-12c; Humboldt and Mendocino, 16-18c.

Produce Receipts.

Receipts of interior produce for the forty-eight hours ending at noon yesterday were as follows: Flour, 15,316 qr sks; 2948 ctls barley, 795 ctls oats, 37,000 lbs butter, 352 ctls tallow. 4200 ctls sugar, 415 bxs apples, 12 bales hops, 4820 sks potatoes, 600 sks onions, 1390 sks bran, 120 sks middlings, 862 tons hay, 10 tons straw, 56 bales wool, 25 sks shorts, 28,950 doz eggs. 92 rolls leather. 1600 hides, 15 bdls pelts, 614 bbls lime, 2540 rolls paper, 300 bxs raisins, 40 gals brandy, 23,950 gals wine.

CITRUS MARKETS

NEW YORK, June 26.—During the past week an average of about 18 cars of oranges have been sold daily with the prices for first class stock very satisfactory. Navels have been in the minority with Sweets, St. Michaels and Valencias in good supply. Nineteen cars were sold at auction here today. The market is firm on good stock and the weather favorable.

WASHINGTON NAVELS (Wholes)

	Averages
Red Globe, xc, Riv. Ex.	$3.40
Colonel, xc, O.G.C. Assn.	2.15
Peerless, xc, C.C.U. Fullerton.	2.85
Victory, ch, C.C.U. Fullerton.	2.85

WASHINGTON NAVELS (Halves)

Colonel, xc, S.M.G.P. Assn.	2.55

JAFFAS.

El Molina, ch, S.M.G.P. Assn.	2.55
Isis, xf, F. H. Spiech & Co.	2.35
El Toreador, st, S..MG.P. Assn.	2.35
Success, xc, F. H. Speich & Co.	2.20

SEEDLINGS.

Blue Globe, xf, Riv. Ex.	3.20
Blue Globe. xf, Riv. Ex.	2.85
Square. O.R., fy, Riv. Ex.	2.65
El Molino, ch, S.M.G.P. Assn.	2.50
Golden, std, Riv. Ex.	2.30
Isis, xf, F. H. Spiech Co.	2.35
Red Globe, xc, Riv. Ex.	2.20
El Toreador, std. S.M.G.P. As.	2.20
Monogram, fy, C.C.U. Redlands.	2.15
Red Globe, xc, Riverside Ex.	2.10
Success, xc, F. H. Piech & Co.	2.05
Fiesta, xc, Riv. Ex.	1.90
Red Globe, xc, Riv. Ex.	1.90
Riverside, std, Riv. Ex.	1.50
Riverside, std, Riv. Ex.	1.40
Stock Label	1.45

VALENCIAS.

Independent, Highlands	4.10
Golden Rule, xc, Riv. Ex.	3.60
Pico, std, S. T. Ex.	3.55
Flower, ch, S. A. Ex.	3.45
Titus Ranch	3.05
Hunter, std, A.C.G. Ex.	2.95
Thistle	2.10

ST. MICHAELS (Whole.)

Squirrel, xc, A. H. Frt. Co.	3.00
Blue Seal, fy, A.C.G. Ex.	3.40
La Palma	2.95
Blue Ribbon, xf, Riv Ex.	2.50
Palm Tree, ch, A. H. Frt. Co.	2.55
Pointer, xc, A.C.G. Ex.	2.30
Captain, Std. A. H. Frt. Co.	2.50
Red Globe, xc, Riv Ex.	2.00
Hunter, Std, A.C.G. Ex.	1.45

ST. MICHAELS (Halves.)

Squirrel, xf, A. H. Frt. Co.	1.35
Quail, xc, O.C. Ex.	1.25

BLOODS (Whole.)

Monogram, fy, C.C.U. Redlands.	2.20
Monogram. fy, C.C.U. Redlands.	2.15

GRAPEFRUIT (Wholes.)

Flower, ch, S. A. Ex.	2.45
La Palma	.60

GRAPEFRUIT (Halves.)

Signet, xf, O.C.G. Assn.	3.30
Colonel, xc, O.C.G. Assn.	2.50

Boston Markets.

Boston, June 26.—During the past week Navels have led, with Sweets a strong second. Mixed cars are common, sometimes outnumbering the "straights" two to one. The market has been falling a little each day. The arrivals are lighter. Two cars of Navels, two lemons, two mixed, one St. Michaels, and one car of Valencias were sold here at auction today. The weather is favorable. The market continues very much depressed.

WASHINGTON NAVELS.

Stork, xc, S. A. Ex.	2.95
Tunnel, ch, S. T. Ex.	2.95
Volunteer, ch, S. A. Ex.	2.80

MEDITERRANEAN SWEETS.

Rey, xf, S. T. Ex.	2.90
Royal, xc, Q. C. Ex.	2.50
Tunnel, ch, S. T. Ex.	2.15

ST. MICHAELS (Wholes.)

Greyhound, ch, S. A. Ex.	1.70
Royal, xc, Q. C. Ex.	1.65

ST. MICHAELS (Halves.)

Queen Bee, xf, Q. C. Ex.	1.00

VALENCIAS.

Bear and Eagle, fy, Tulare Co.Ex	3.90

LEMONS.

Pride of Corona, xf, Q. C. Ex.	3.90
Independent, fy, Highlands.	3.50
Independent, ch, Highlands.	2.95

An excellent opportunity to secure some fine S. C. White Leghorn cockerels is offered by the advertisement of the Raymoore Poultry Farm in this issue.

The Imperial Investment Co., of Los Angeles, are offering an exceptional opportunity to any one desiring to lease some good farming land. Buildings and necessary improvements will be furnished. See their advertisement and write them for full particulars.

"The best and cheapest stock and poultry food on the market" is the claim made for Meal-Alfalfa, a fine product of the beet and selected well cured alfalfa. It is sold by agents in nearly every city and town on the Coast and a free sample can be had by writing the Stockton Meal-Alfalfa Company, Stockton, California.

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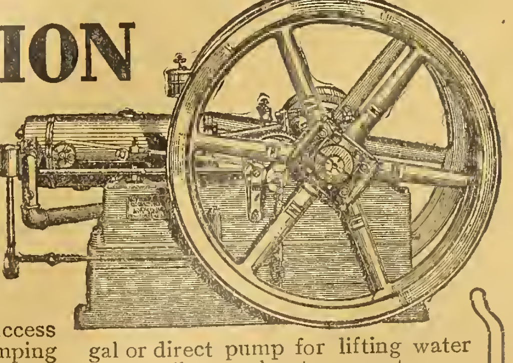

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For all those who wish to irrigate by pumping, the I. H. C. gasoline engine is the one best power.

The difference between success and failure in an irrigation pumping plant is often a question of fuel.

The I. H. C. engines use gasoline—a cheap and easily transported fuel.

They take the least fuel and convert it into the most power.

They are unequalled when put against a steady load as in pumping, and sustain their full rated power with persistency and regularity.

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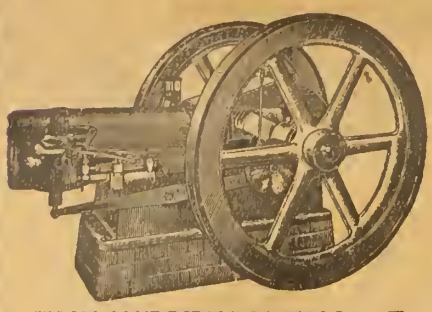

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Any Size from 5 to 500 H. P.

Burns cheapest fuel—gasoline, distillate or crude oil—with a saving of 20 to 40 per cent over any other style. **Send for Illustrated Catalogue** fully describing every detail of construction; tells **how** and **why** the Western excels all others; it gives the facts—the proof. Learn what Western engines are doing for others. Send your name today—ask for latest issue, A6.

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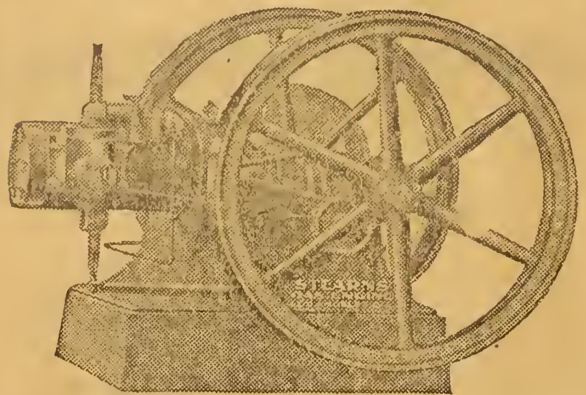
Maximum Power at Minimum Cost

WESTERN GAS ENGINE CO.
908-932 N. MAIN ST. LOS ANGELES, CAL.



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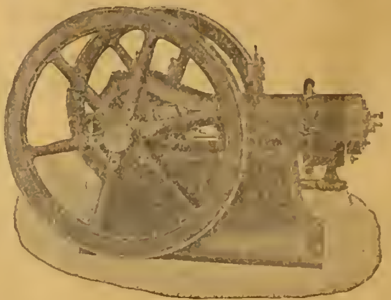

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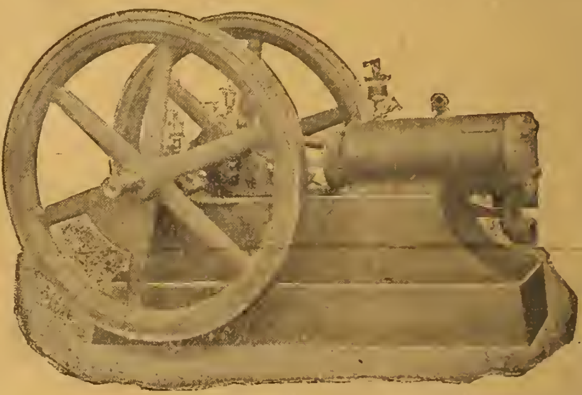

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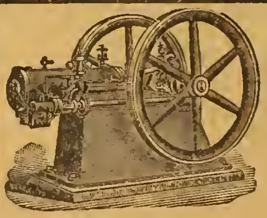

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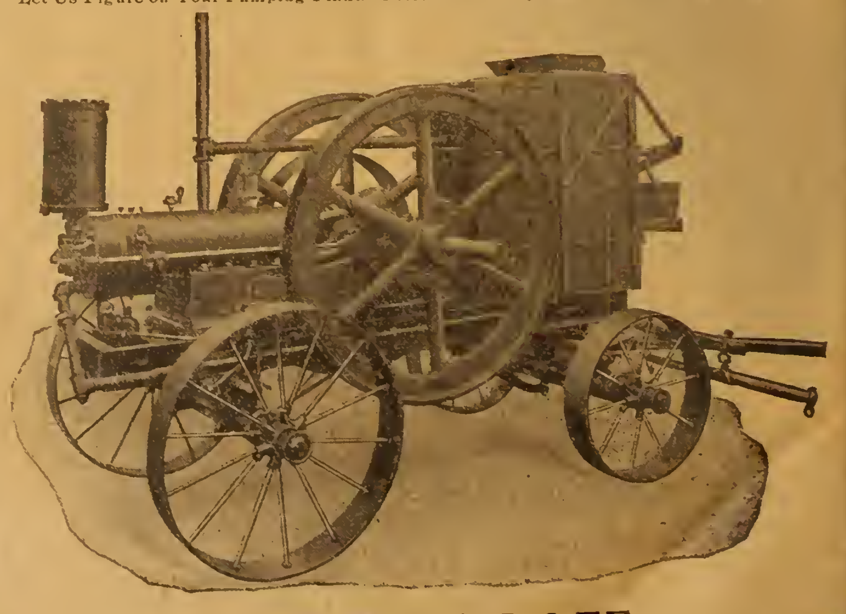

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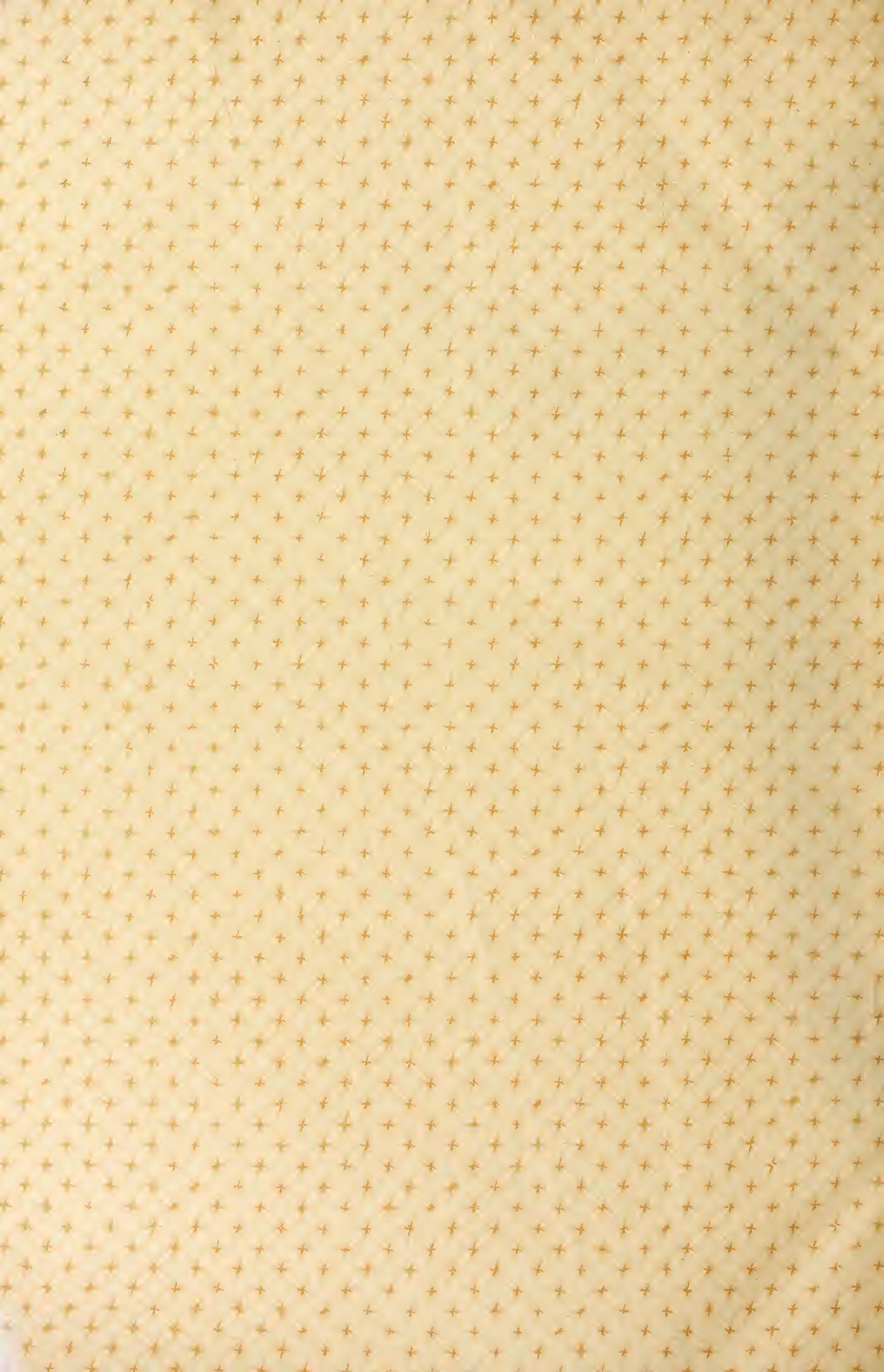

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